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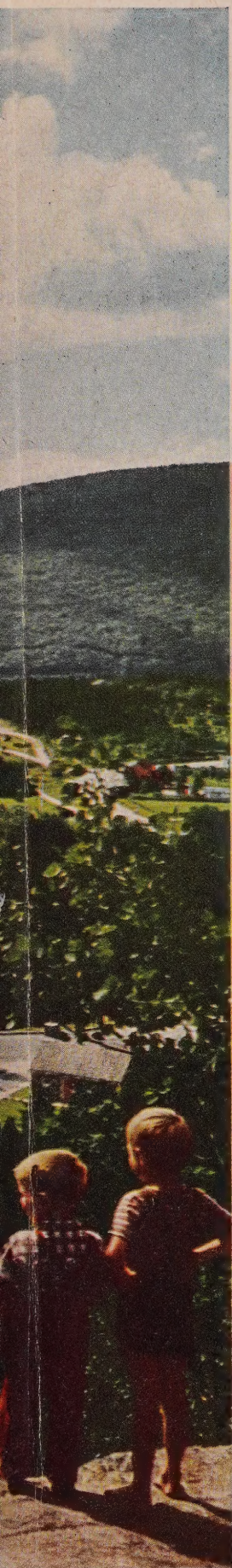
CANADA 1960

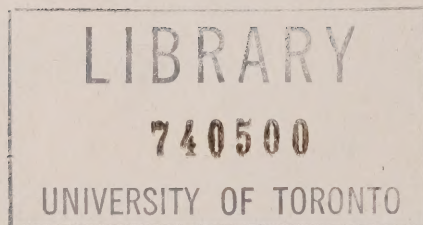
The
Official Handbook
of
Present Conditions
and
Recent Progress

*Prepared in the
Information Services Division
Dominion Bureau of Statistics*

*Published under the authority of
The Honourable Gordon Churchill
Minister of Trade and Commerce
Ottawa*

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Foreword

THE illustrated Canada Handbook offers to the Canadian public and to the peoples of other lands a factual, annual survey of the Canadian economy set in a statistical background and illuminated with illustrations of the recent economic, social and cultural development of the nation. In text and tables, in layouts and illustrations, *Canada 1960* seeks to portray the present conditions of the Canadian people, their economy and its resources, their institutions and way of life.

Apart from its special features, *Canada 1960* draws on the same official sources of the Dominion Bureau of Statistics and the various departments of the Government of Canada that contribute to the larger reference volume, the *Canada Year Book*. The illustrations are selected from a wide range of governmental, commercial, press and private sources.

Canada 1960 is produced in the Information Services Division of the Dominion Bureau of Statistics under Dr. C. C. Lingard, Director of the Division.

A handwritten signature in dark ink, reading "Walter G. Suffer". The script is fluid and cursive, with a large initial 'W' and 'S'.

Dominion Statistician

Dominion Bureau of Statistics,
Ottawa, August 31, 1960.

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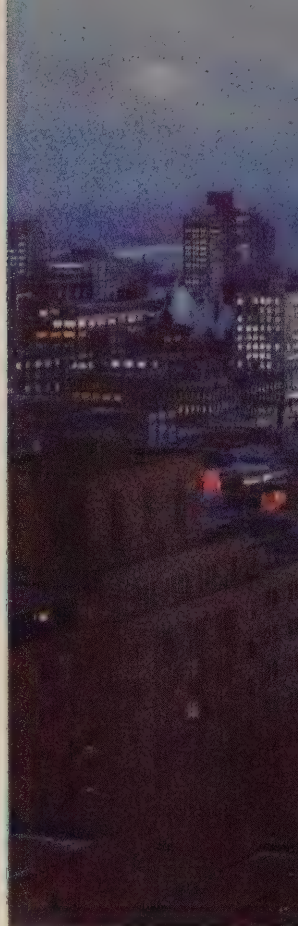
Canada in Transition

THE first sixty years of the twentieth century have wrought a remarkable series of developments in the Canadian scene. They have witnessed an unparalleled expansion in the economic basis of Canada's national life, a tenacious piecemeal evolution into full nationhood without destroying old associations, and a display of rare political maturity in the Canadian role in the international community, marked by moderation and impartiality and by devotion to the ideals of peace and freedom when confronting the grave issues of the modern world.

With the opening of the twentieth century, Canada stood on the brink of a decade of unprecedented progress in which rates of increase in population, occupied farm acreage, labour force, influx of foreign capital and manufacturing output indicated a pace of development matched perhaps only in the recent boom decade of the 1950's, culminating in the complex industrial nation of today. For it was during the decade from 1901 to 1911 that wheat emerged as the country's first great export staple and became the dominant element in the process whereby Canada evolved into a strong trading and industrial nation. Indeed, the production and sale of wheat in contrast to that of older staples—furs and timber—provided the necessary quality of permanence to the opening of the frontier West through large-scale settlement and the accompanying duplication of economic, social and political institutions and of financial, marketing and transportation systems from eastern Canada.

Among the prominent features of this great 1901-to-1911 decade were the significant stimuli to growth found in external as well as internal factors. It was an era of world-wide expansion and Canada shared significantly in the rapidly growing demand of the then great industrial countries for primary products and hard spring wheat, the huge outflow of British investment capital, the effects of urbanization of the United States and the shrinking of its western land frontier. At the same time an energetic Canadian immigration policy came into operation, based upon a free-homestead system which was designed to add an increasing flow of Americans and Canadians to the flood of European immigrants reaching the seemingly limitless agricultural lands of the prairie West.

Thus, the great agricultural era of prairie settlement exploded into being in one of history's swiftest and most dramatic population movements. A new program of railway building gave Canada not only three transcontinental lines instead of one, but an accompanying intensive colonization propaganda which, in the decade 1901-to-1911, resulted in a population increase at a record annual average of 183,500. Immigrant arrivals climbed from less



Toronto, electrically bed



has grown from a town of 208,000 souls in 1901 to a steel and concrete metropolis of 1,358,000 people in 1959.

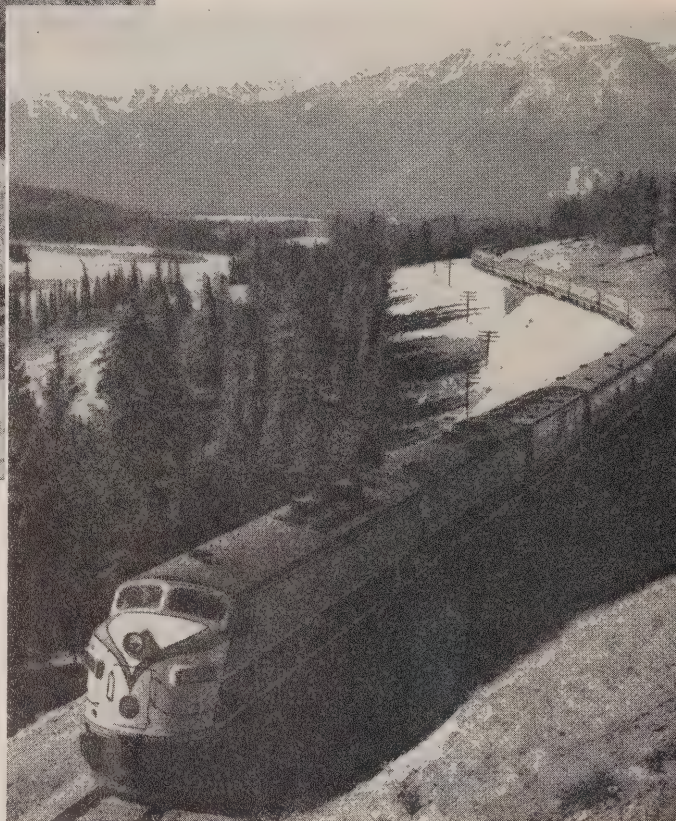
than 50,000 in 1901 to almost 190,000 in 1906 and to over 400,000 in 1913. By 1911, almost 50,000,000 acres of new farm lands in the Prairie Provinces were occupied.

By the close of this first decade of the century, the prairie population exceeded 1,300,000, with settlement spread along a railway network of 11,600 miles, of which 7,500 had been constructed subsequent to 1901. Moreover, Canada's wheat production had increased to 231,000,000 bu. in 1911 from 56,000,000 a decade earlier in consequence of the revolutionary changes wrought in the prairie horizon, characterized by newly ploughed rich black wheatlands, vast golden oceans of waving grain, scattered farmsteads and towering grain elevators at six-to-eight mile intervals in market towns strung together along endless railway and telegraph lines.

Canada's whole economic development of fifty years ago hinged basically on this unprecedented wave of prairie settlement. The impact of the rate and magnitude of this settlement—based as it was on the heavy demand for wheat in other parts of the world and on their provision of the manpower and the investment capital so necessary at this stage of the nation's growth—was electric in its effect on other regions of the country and on other industrial sectors of the economy. Canadian manufacturing, heavily concentrated in Ontario and Quebec, increased from two to fivefold, during this first decade of the century, in almost every category of production—whether textiles, iron and steel products, flour and grist-mill products, or other consumer goods and capital equipment. The iron and steel industry



Tomorrow's children will never know the mournful whistle of the steam engine, for the switchover to diesels is now complete.



and the coal mines of Nova Scotia also felt the stimulus of the prairie wheat economy, and it actually instituted a new era in the economic life of British Columbia where the population more than doubled during the decade 1901-to-1911.

Great quantities of the coastal province's lumber and shingles were used in construction of the almost exclusively wooden housing requirements of the tens of thousands of prairie farmsteads established annually and of the clusters of grain elevators and other structures of market centres. Fence posts of British Columbia cedar together with eastern Canadian barbed wire provided thousands of miles of prairie fencing to shut out the ranchers' cattle and sheep from the farmers' grain fields. Moreover, the Canadians of the plains relied heavily on the orchards of the coastal province for their fruits and on the imports of Vancouver for their tea, coffee and spices.

While integration of the prairie and coastal economies was vital to both regions in the pre-Panama Canal era, the Canadian east-west economic and political alignment linked the prairies even more powerfully with eastern Canada and greatly accelerated the growth of industry in Ontario and Quebec where significant beginnings were made during this first decade in the production and export of pulp and paper and non-ferrous metals—items which were later to rival and sometimes to surpass wheat as Canada's leading export commodities. The transportation of manufactured products westward to the Prairie Provinces and of prairie wheat eastward to world markets brought about the maximum utilization of the nation's transcontinental

railway system and permitted the diffusion of the buying power of the pioneer prairie farmers and community throughout the national economy.

Of course, the industries of Ontario and Quebec, the lumber and fisheries of the Pacific coast, and the coal and iron of the Maritimes also played their part in the national development, but it was prairie wheat that sparked interest in Canada in the minds of foreign buyers and investors and of prospective immigrants. Their investment of capital and of manpower provided the initial stimulus for the greater diversity in resource utilization and production and the enhanced complexity in Canadian economic development of the subsequent generation.

In the course of a single generation—by the middle of the twentieth century—Canada attained industrial maturity without adverse effects on the older sectors of its economy. Although it moved away from its former specialization in primary production and by 1950 was outranked in manufacturing by only a half-dozen industrial nations, its prosperity and growth remained dependent on its ability to find export markets for surplus food-stuffs and raw materials. The attainment of a Canadian standard of living, second only to that of the United States, and of a reasonably well-balanced economy within such a short interval were the effects of the adoption of innovations in industrial technology under the pressure and attendant opportunity of two world wars. These periods of insecurity and forced expansion disrupted the old patterns of specialization and trading relationships between older industrial nations and primary producers, by excluding the competition of the former and fostering the infant industries of the latter.

Thus, the First World War was directly responsible for a marked expansion in Canadian non-ferrous metal refining (especially copper, zinc, and nickel), in fabricated and semi-fabricated steel products (shells), and in shipbuilding, while it launched the Canadian aircraft industry and stimulated a wide range of secondary industries. The Second World War greatly accelerated the expansion of Canada's manufacturing capacity, particularly evident in electrical apparatus, tool-making, chemicals, aluminum, and in the aircraft and shipbuilding industries; in addition, several new branches of manufacturing, such as synthetic rubber, optical glass, and roller-bearings were established for the first time. While the period between 1926 and 1929 witnessed a rapid expansion in manufacturing investment in the automotive industry, in the pulp-and-paper industry and in non-metallic minerals, the two wars gave marked impetus to the discovery of new resources of metallic minerals and mineral fuels and were responsible for the forced application of a whole series of innovations in industrial technology—whether new energy fuels, new motive power, new structural materials, or new petrochemical products. Thus wartime industrialization altered the basis of the Canadian economy, accelerating the trend away from an essentially agricultural to an essentially manufacturing productivity. The mechanization of western agriculture steadily increased the optimum size of the farm unit causing a decrease in the number of farms and strengthening the movement of population from farm to urban centre and to new fields of opportunity in industrial development in other parts of the country.

When men and capital moved westward into the interior of the continent, drawn by the magnet of the fertile prairie lands, they bypassed the formidable barrier of glacially-eroded rock, lake and muskeg known as the

Canadian Shield which encircles Hudson Bay and reaches the northern shores of the Great Lakes. But during the current half-century this great barrier, yielding to the development of new techniques of geological surveying, new methods of transportation, new industrial processes, and new means of power generation and transmission, has been transformed into a tremendous national asset—a producer of power, of mineral and of forest wealth. Its exploitation has given Canada a steadily expanding industrial economy and a broadening northern dimension. The fast-flowing rivers with their natural reservoirs are providing cheap hydro-electric power, which is the major factor in the development, particularly in the hinterlands of Ontario, Quebec and British Columbia, of the pulp-and-paper industry and the non-ferrous metal smelting and refining industry, and which at the same time supplies electricity to the concentrated and populous industrial and domestic markets in the St. Lawrence Lowlands and the southwestern Pacific coast. Perhaps most dramatic among the place-names associated with industrial development consequent upon hydro-electric power development since its production at Niagara Falls are Arvida, Shipshaw and Baie Comeau in Quebec, Kitimat in British Columbia, and the recent 2,200,000 hp. St. Lawrence power development of the International Rapids section of the River.

Although Canada's vast accessible productive forests have long been important in the country's economic development, the growth of the Canadian newsprint industry from a negligible low in 1900 to that of the world's leading producer and exporter since 1913, and the establishment of pulp and paper as Canada's leading industry—whether by criteria of output value, capital invested, wages paid, or share in external trade—exemplify exceptionally well certain characteristic features of Canada's twentieth century industrialism—the availability of cheap hydro-electric power, the economies of proximity to abundant raw material, the locational advantage of large and expanding markets particularly of the United States, the successful application of modern technological methods to the development of the nation's natural resources, and the dependence of the industry's prosperity upon tariff policies and fluctuations in demand in foreign countries.

Many of these same features characterize Canada's current metallic mineral production which, in conjunction with remarkable technological and geophysical developments of the past generation (including recent aerial geological reconnaissance mapping), emphasize Canada's rank in the forefront of the world's sources of supply of such better-known metals as nickel, copper, zinc, gold, silver, lead, platinum, asbestos and iron ore and the less familiar tantalum, lithium, tungsten, titanium and uranium.

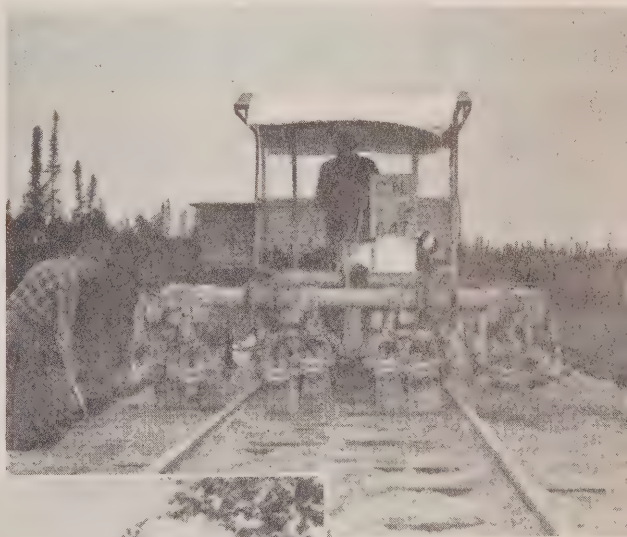
This remarkable mineral development had barely got underway by 1900 and, although the industry had developed a very strong trading position and well-equipped modern plants in the late 1930's as armament stockpiling increased, it was not to enter upon its period of most revolutionary growth until 1946 and more especially until the expansive 1950's. Gold long remained the leading Canadian mineral in value of production and search for it stimulated interest in other minerals, but it was non-ferrous metal production from four of the largest and richest concentrations of complex ore bodies in the world and the discovery of new metallurgical methods of separating and refining the various ores (gold, silver, zinc, lead, copper, platinum) that put the Canadian mining industry among the world leaders

and made Sudbury (nickel-copper—1883 and 1916), Cobalt and Porcupine-Kirkland (silver, gold—1903 and 1908-11), Sullivan mine at Kimberley (lead, zinc and silver—1892), Flin Flon (copper, zinc and precious metals—1914), and Noranda (copper and gold—1920), household words in the mining industry.

Although the building of railways had a dual relationship to the development of Canadian mineral resources through making access possible and through fortuitous discovery by construction crews of nickel in the Sudbury region (1883) and of silver at Cobalt (1903), the advent of aircraft after 1918 greatly extended the range of exploration and prospecting and brought about such ore discoveries as silver-lead at Keno Hill, Yukon (1919), copper-gold at Rouyn in western Quebec (1932), and silver-radium at Great Bear Lake, N.W.T. (1930).

As transportation improved and the demands for minerals kept pace with the backlog of postwar industrial expansion and as newer methods of geophysical surveying began to be used, more remote areas became of interest to the prospector and associated resource-development syndicates. Down to 1945, Canada suffered economically and nationally from such major industrial deficiencies as the paucity of native iron ore, petroleum and natural gas, and the lack of coal in the industrialized areas of Ontario and Quebec. These deficiencies in the traditionally basic elements of industrial development were partly offset, it is true, by the proximity of United States coal, iron and steel, and partly by Central Canada's non-ferrous metal and

A multiple tamper packs ballast under and around the cross-ties on the new St. Félicien-Chibougamau line linking deep-water ports on the Saguenay River to the promising but unexploited natural resources of northern Quebec. The first train arrived at St. Félicien in October, 1959.



This 400-foot timber trestle bridge over the Grass River is part of a new 52-mile railway from Optic Lake to the new mining development at Chisel Lake, in northern Manitoba.

hydro-electric power resources. But, by 1947, the mining industry entered upon a period of remarkable growth and the Canadian economy upon its most remarkable era of industrial expansion, sparked by the discovery of the Leduc oil field in Alberta and by the immense Steep Rock and Quebec-Labrador iron ore developments.



The grainfield, once the symbol of Canada's economy, and the main stimulus to prairie settlement, has yielded to mineral resources as the most important factor in new exploration and development.

The subsequent record of Canadian development in mineral production has no equal in the world. Canadian iron-ore shipments in 1959 totalled over 24,400,000 tons, of which nearly 4,000,000 tons went to Canadian consumers, while Canadian steel mills consumed over 6,500,000 tons during the year, one-half being Canadian ore. Canada's electric power utilities generated over 100,000,000,000 kwh. during 1959 and by the close of the year possessed a generating capacity of 21,157,000 kw., an increase of 250 p.c. in ten years. As a result of an investment of \$5,632,000,000 in the discovery and development of Western Canadian oil fields and in the equipment of the industry's operations, crude petroleum production multiplied over six times in the decade just ended to a 1959 total of 184,500,000 bbl., oil pipeline installation increased ten times to over 7,500 miles, refinery capacity tripled and the petrochemical industry expanded five-fold. With exploration extending ever northward, even into Canada's Arctic islands, proven recoverable oil reserves at the 1959 year-end totalled 3,999,000,000 bbl.

A comparable story of revolutionary speed of discovery and development could be recounted for natural gas which increased five-fold from 1950 to proven recoverable reserves of 26,600,000,000,000 cu. ft. in 1959. Trans-Canada gas pipeline and other Canadian gas pipeline mileage (for gathering, transmission and distribution) totalled 28,400 miles, while natural gas pro-



Baie Comeau (pop. 7,500), more than 400 miles north-east of Montreal, is a newly developed industrial town, with an aluminum plant, a large paper mill and a port which has an overseas grain-handling capacity second only to that of Montreal.

Greater Montreal (pop. 1,600,000) is the largest industrial city in Canada with a great aggregation of light and heavy industry.





No longer does the frontier wife of today have to cope with substandard environment. New industrial towns are planned, and houses as modern as those in cities are built, equipped and landscaped, often by the industry. Educational and recreational facilities are not forgotten and many parents like to raise their families in the smaller, friendlier environment than that of the big city.

duction amounted to 427,800,000,000 cu. ft. in 1959, much of it being piped eastward to the industrial heartland to reinforce the nation's energy base. By 1959, piped Western Canadian gas and oil were proving strong rivals of Ontario's hydro-electric power system and at the same time offsetting its deficiency in and dependence upon the United States for the more standard type of fossil fuel—coal. Canada possesses immense reserves of coal estimated at about 99,000,000,000 tons, but 96 p.c. of it occurs in Western Canada and 3 p.c. in Nova Scotia's high-cost submarine mines.

Equally spectacular developments occurred during the 1950's in the mining of uranium ores in the rich Beaverlodge region of northern Saskatchewan and in the Blind River, Elliot Lake and Bancroft areas of Ontario. By 1959 Canada was in the forefront as a world source of uranium concentrate, having produced in that year 15,497 tons. Canadian scientists had also taken the lead in the design and construction of atomic reactors using natural uranium to produce commercial power for peaceful purposes. Moreover, with 96 p.c. of Canada's uranium reserves located in Ontario, that province appeared abundantly endowed with fuel for the nuclear electric power generating stations of the future.

The discovery of immense oil reserves in Western Canada and the attendant refinery expansion, pipeline construction and intensive search for additional fuel and energy resources have brought about a radical change in the economic outlook of the whole region and, at the same time, greatly increased the rate of mechanization in western agriculture. After the end of World War II, the common utilization of the full range of new power machinery—grain combines, tractor-drawn and motor-powered machinery for tillage and harvesting and farm electrical equipment of many kinds—had an accelerating effect upon the already prevalent movement of population from the farm to urban centre, since much less manpower was required to operate the farms which increased in size but decreased in number. Specialization in agricultural enterprises, together with the expenditure of capital in farm machinery and equipment, also increased production per man-hour. Thus, as agriculture became gradually integrated into the commercial community, the establishment of other aspects of modern industrialism in the Canadian West brought to this previously specialized area the brightened prospect of a more diversified and better-balanced economy. Indeed, one of the most significant Canadian developments during the past decade has been the diversification of the economy of the Prairie Provinces. Agriculture

accounted in 1959 for only 25 p.c. of their total production in contrast with the 1950 percentages of 75, 44 and 38 for Saskatchewan, Alberta and Manitoba, respectively. Wheat was no longer king; the greater part of their wealth was being derived from mining (the extraction and export of oil, natural gas, uranium, coal, petrochemicals and base metals), manufacturing and construction.

The revolutionary developments in resource exploitation have been accompanied by equally striking developments in capital investment and external trade. The magnitude and concentration of foreign investment in extractive industries (more recently in petroleum, natural gas, and other mining), in pulp and paper and in related manufacturing facilities, have vastly increased Canada's national production by providing much of the momentum behind the nation's remarkable industrial advance and have established its position as one of the world's leading traders—fourth in rank by value and second on a per capita basis.

During the past sixty years, Canada's development as a world trader has been truly remarkable. In volume terms, Canadian imports from a 1896-1910 average to a 1948-1957 average increased nearly nine-fold (compared with a value increase of over 22 times), while during the recent postwar years 1948 to 1957 the increase in volume was about 96 p.c. (compared with 121 p.c. in value). The volume of Canadian exports, on the other hand, increased over 13 times from the 1896-1910 average to the 1948-1957 average (compared with an increase in value of about 33 times), while between 1948 and 1957 the increase in export volume was about 58 p.c. (compared with 91 p.c. in value).

A significant shift in the direction of Canada's external trade likewise took place. As early as 1883 the United States had replaced the United Kingdom as the leading source of Canadian imports, and throughout the past sixty years of the present century the United States' share steadily increased from 59 p.c. in 1900 to 71 p.c. in 1957, declining to 69 p.c. in 1958. Meanwhile, the United Kingdom's share declined from 26 p.c. in 1900 to 9 p.c. in 1957, increasing to 10 p.c. in 1958. On the other hand, the United States overtook the United Kingdom lead as a purchaser of Canadian exports only after 1926. In 1900, the United States and United Kingdom percentages were 34 and 57 respectively; by 1939 they were 41 and 36; by 1957 the margin had widened to 60 and 15, and closed again slightly to 59 and 16 in 1958.



Building one of the "roads to resources" in the Northwest Territories.

Roughly two-thirds of Canada's total trade is now with the United States, with which it has had a large and continuing annual trade deficit since 1900, except for 1945. To finance this deficit, Canada has relied upon foreign capital investments from United States and elsewhere and upon surplus current account earnings chiefly in the United Kingdom. These non-resident capital investments have grown from an estimated total book value of \$1,232,000,000 in 1900 to \$19,100,000,000 in 1958, the relative U.K. and U.S. portions being \$1,050,000,000 and \$168,000,000 in 1900 and \$3,100,000,000 and \$14,600,000,000 in 1958. While the inflow of capital from other countries advanced from \$14,000,000 to \$1,400,000,000 during the same period, it is significant that during the past sixty years the United States has largely replaced the United Kingdom as Canada's main source of foreign capital and as Canada's major foreign market and foreign supplier—all comprising a pattern that promises a steady growth in the economic interdependence of the two neighbouring powers.

Many aspects of the present Canadian economic and social state—portrayed elsewhere throughout this publication—could well be shown in striking relief against the backdrop of the Canadian scene at the opening of the twentieth century. They would tend to emphasize the revolution wrought in the living standards and habits of the Canadian people—in working conditions, in incomes, in unit output, in household conveniences, in the shift from rural to urban living, in the burgeoning cities with their sprawling suburbs, their traffic congestions and supermarkets, the expansion of government activities, the emergence of social welfare services, the complexity of public finance. Other significant characterizations of sixty years of development might likewise embrace such themes as the immensely important arteries of commerce and communications—the new St. Lawrence Seaway and its broadened commercial system in contrast with the River's traditional role in the Canadian economy; the diesel-powered national railways and jet-propelled aircraft with their technical installations, their traffic-control equipment, radio aids to navigation and imposing new terminals; Canada's transcontinental systems of intercommunications in the fields of radio and television and their contributions to the dissolution of regionalism, to the increasing mobility of the population and to national unity and consciousness.

Emerging from such influences and from the increasing effect of industrialism upon the traditionally rural province of Quebec, there has been a growing rapport between French-speaking and English-speaking Canada, a fading of the former sectionalisms and a decline in the divisive elements customarily associated with diverse ethnic groups. Indeed, in recent decades there has emerged a strong new sense of Canadian national consciousness, of Canadian identity and common destiny, and of conscious pride in national achievement and in the truly rich inheritances derived from the various ethnic groups composing the Canadian people. This new concept of democracy based on ethnic and cultural diversity—this doctrine of “unity in diversity”—is setting the philosophical and social pattern for Canada with respect to both its domestic and international policies.

No less fundamental to this steady growth of national consciousness and pride was Canada's evolution during the past half-century to complete sovereign status in domestic affairs and of a corresponding stature of Canadian participation on terms of equality in the international field. Indeed, Canada's



This clover-leaf at Chilliwack, B.C. is one of hundreds on the 4,444-mile Trans-Canada Highway almost completed, under federal-provincial agreements in every province except Quebec.

unparalleled expansion in the economic basis of national life has been matched by a peaceful and piecemeal evolution of the foundations of its nationhood from colonialism through self-governing dominionhood to the status of leader among the Middle Powers. This has meant not only the expansion of the scope of Canadian responsible cabinet government to embrace the sovereign functions of the control of the royal prerogative insofar as it concerns Canada, the placing in Canadian hands of the entire control of administration in Canada, the abolition of judicial appeals from Canadian courts to the Judicial Committee of the British Privy Council, the establishment of Canadian citizenship as distinct from the category of 'British subject', but also the attainment of independent national status in the realm of external affairs—encompassing such vital international matters as extraterritorial jurisdiction, exchange of diplomatic representation, treaty-making powers, the ability to declare war, to claim the rights of neutrality and to conclude peace, and above all the right to participate in whatever international conferences and organizations are considered to be appropriate to Canada's interests.

Thus, by 1947, Canada had evolved a unique manner of nationhood that was content with the substance of independence without following the elusive shadow of nominal separation. Although a few of the vestiges of the old colonial status remained in the lack of a distinctive Canadian flag and a Canadian mode of constitutional amendment, this Canadian fashion of nation-building has been a major element in the formation of a unique Commonwealth of Nations.

Canada's Present World Relations

Canada's relations with other countries, as those of independent states generally, are governed by national interests, whether immediate or remote. These interests are largely concerned with national security, foreign trade, and the desire to foster friendly and useful relationships with people of other lands having similar concepts and traditions of law, of liberty and of orderly and responsible government. For these and other purposes, Canada conducts an extensive and varied program of activities abroad through diplomatic, consular and trade representatives in the principal countries of the world.

There are certain international organizations and institutions of particular interest to Canada. Membership in the Commonwealth is of major importance, although the nature of this importance is not readily defined. Commonwealth membership confers no legal rights and imposes only those duties that stem from a sense of goodwill toward and responsibility for other Commonwealth countries; its adherents are not united for political, defensive or economic purposes and fewer than half of Canada's people have family ties with the United Kingdom. Nevertheless, the Commonwealth connection, however intangible, is an important element in Canada's external relations and the Commonwealth, showing a remarkable adaptability to changing circumstances, remains one of the world's great associations of sovereign states.

As one of the original signatories to the North Atlantic Treaty, Canada remains a consistent supporter and advocate of NATO. Membership in NATO enables Canada to work intimately with the United Kingdom, the United States and the 12 European member states in the formulation of Western policies and attitudes designed to facilitate progress toward a settlement of some of the outstanding issues dividing the world today.

Underlying Canada's membership in NATO is, of course, membership in the United Nations. Through this membership, Canada attempts to contribute toward the solution of fundamental problems of the world's peace, good order and well-being. Canada has, not infrequently, been able to act successfully as mediator between advocates of points of view which initially appeared to be irreconcilable.

The Hon. Donald Fleming, Minister of Finance, and the Hon. Howard Green, Minister of External Affairs, at the opening session of NATO in October, 1959.



The Commonwealth. Commonwealth membership is valued for the close relationship it affords with a multitude of nations which, despite their diversity, have bonds in shared traditions and ideals. Constant consultation and friendly exchange of views are maintained among all members. The Prime Ministers of the United Kingdom, Australia and the West Indies Federation visited Canada in 1959, as did many other leading figures from these and other Commonwealth areas. In November a Commonwealth Parliamentary Conference was held in Canberra. A Canadian Parliamentary Delegation attended, headed by the Speaker of the House of Commons.

Canada's principal share of aid to under-developed countries has been channelled through the Colombo Plan, which began as a scheme to assist the Commonwealth countries in southeast Asia and has been extended to other countries in the area. From its beginning in 1950 to April 1960, Canada has made \$281,670,000 available to the Plan. Among the projects assisted by Canada's contribution have been irrigation and hydro-electric developments in India and Pakistan, an atomic reactor in India and a fisheries development program in Ceylon. Canadian experts have been sent to work in southeast Asia and many scholars from the area have received training in Canada in agriculture, engineering, medicine, business and public administration and other fields.

At a Commonwealth Conference on Education held at Oxford in the summer of 1959, Canada agreed to participate in an exchange of 1,000 scholarships among Commonwealth countries.

The United Nations. An essential element in Canadian foreign policy is recognition of the principle of organized international co-operation on a basis of universality.

Canada's contribution over the years to the work of the United Nations has included participation in mediation efforts in Kashmir, Indonesia and Palestine and in the collective UN action that stopped aggression in Korea. In the 1956 Middle East crisis, Canada played a significant role and continues to participate in the UN Emergency Force.

Canada has been a member of the outer-space committee which was created at the thirteenth session of the Assembly, where useful work in the technical and legal spheres was accomplished. Canada has also continued its humanitarian contributions to the several UN programs for refugees, and marked World Refugee Year by the admission to Canada of 100 tubercular refugees and their families. In the field of disarmament, Canada holds the view that the UN should play an active role, and is a member of the ten-power group, agreed upon in August 1959, which will have primary responsibility in this field and will report its progress to the United Nations Disarmament Commission.

Canada's contribution to the United Nations includes a number of financial obligations. In 1959, the Canadian assessment in the regular budget was 3.11 p.c. which, with the contributions to the budgets of the United Nations Specialized Agencies, totalled about \$3,500,000. Canadian contributions to such special UN programs as the United Nations Children's Fund (UNICEF), the United Nations Expanded Program of Technical Assistance (ETAP), the United Nations Relief and Works Agency for

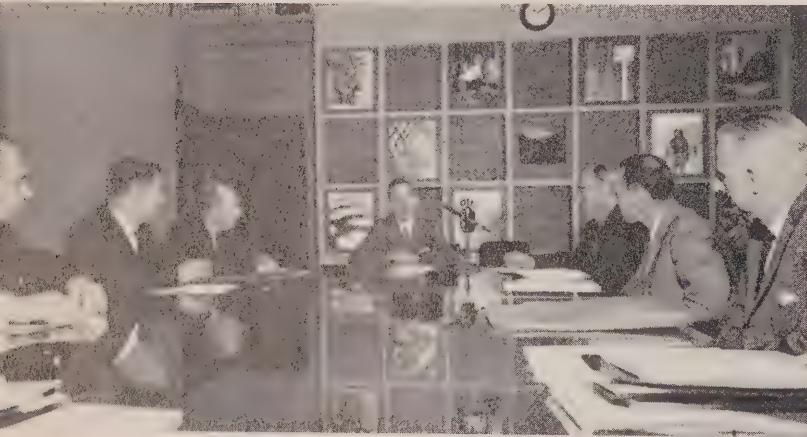
Palestine Refugees in the Near East (UNRWA) and the program of the United Nations High Commissioner for Refugees amounted to \$3,370,000. To the Special Fund for assistance to the less-developed countries, Canada contributed \$1,931,000. Canada also provides training facilities for United Nations fellowship holders and has sent Canadian experts abroad under United Nations auspices.

NATO. The primary objective of NATO is to provide a strong military deterrent to any aggression within the North Atlantic area.

Canada's main defence commitment continues to be directed toward the support of NATO. This country's contribution in Europe consists of an Infantry Brigade Group and an Air Division. In addition, a substantial part of Canada's fleet is earmarked for the defence of the coastal waters in the Canada-United



Canada and the U.S. are co-operating in the control of lampreys in fishing lakes and rivers.



U.S. and Canadian postal officials confer on modernization of the 37-year-old Postal Convention between the two countries.

Canadian and American staff at the joint weather station at Eureka, Ellesmere Island.



States region of NATO, should an emergency arise. The anti-submarine capabilities of these naval forces were appreciably strengthened with the introduction in 1959 of the Argus maritime aircraft. Canada also co-operates closely with the United States through the North American Air Defence Command (NORAD) for the security of the North American region.

Since its inception in April 1950, Canada has provided under a Mutual Aid Program assistance to NATO European countries in the form of military equipment, aircrew training and logistic support for materiel as well as through contributions to NATO budgets. Approximately \$1,700,000,000 has been allocated for these purposes. More than 5,500 pilots and navigators from ten member countries graduated under the NATO Air Training Plan carried out at RCAF establishments from 1950 until the completion of the program in July 1958. A limited number of aircrew trainees from European countries are continuing their training in Canada under special agreements.

The United States. Geography and history have made Canada and the United States neighbours, and tradition and a common heritage have endowed the two countries with many similar values. Ready means of communication and commerce have fostered on this continent the creation of the world's largest two-nation market so that co-operation in trade and economic activities, as well as in scientific, social and cultural endeavour, is very common practice and is conducted as a matter of course with little or no fanfare. Also the ideological conflict of the twentieth century has made essential a close partnership between Canada and the United States in the defence of North America. A notable manifestation of the accomplishments that close co-operation between the two countries can achieve was the construction of the joint St. Lawrence Seaway and power project, which was completed during 1959.

Posts Abroad. At the end of March, 1960, Canada was represented abroad by the following diplomatic and consular posts:—

Embassies (34)			Legations (4)
Argentina	Haiti	Peru	Czechoslovakia
Austria	Indonesia	Portugal	Finland
Belgium*	Ireland	Spain	Iran
Brazil	Israel	Sweden	Poland
Chile	Italy	Switzerland	
Colombia	Japan	Turkey	
Cuba	Lebanon	U.S.S.R.	
Denmark	Mexico	United Arab Republic	
Dominican Republic	Netherlands	United States	
France	Norway	Uruguay	
Germany		Venezuela	
Greece		Yugoslavia	
			Office of Commissioner (2)
			West Indies:
			Port of Spain, Trinidad
			Nigeria:
			Lagos
Offices of High Commissioners (9)	Consulates General or Consulates (13)		Permanent Delegations and Missions (4)
Australia	Brazil:	United States:	Berlin (Military Mission)
Ceylon	São Paulo	Boston	Geneva (United Nations)
Ghana	Germany:	Chicago	New York (United Nations)
India	Hamburg	Detroit	Paris (North Atlantic Council and Organization for European Economic Co-operation)
Malaya†	Iceland:	Los Angeles	
New Zealand	Reykjavik	New Orleans	
Pakistan	Philippines:	New York	
South Africa	Manila	Portland, Maine	
United Kingdom		San Francisco	
		Seattle	

* Also accredited to Luxembourg.

† Also accredited to Burma.

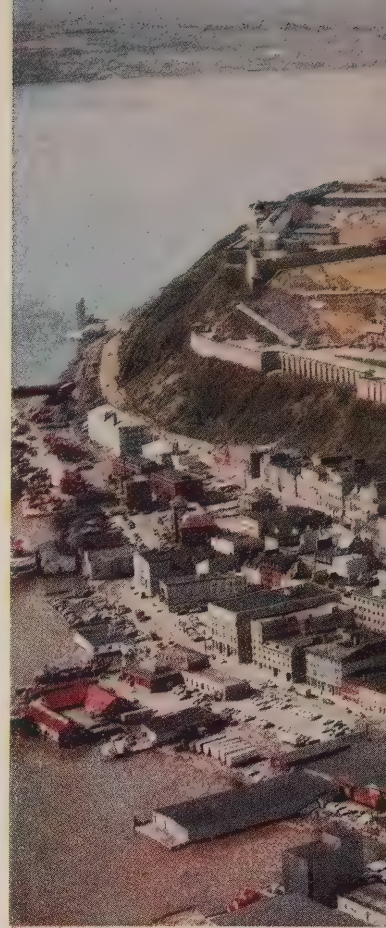
The Land – Discovery and Geography

OCCUPYING the northern half of the North American Continent, with the exception of Alaska and Greenland, Canada is surpassed in area among the nations of the world only by the U.S.S.R., its neighbour across the Arctic. In terms of physiography and historical development, Canada's 3,851,800 square miles of land, rock, lakes and rivers may be divided into five principal regions dominated by a vast central plateau (the Canadian Shield) sloping on its flanks to form fertile interior lowlands that lead in turn to mountainous ocean borderlands in the west, the east and the north.

Quebec, Canada's largest province and second in population and in economic production, is five-sixths underlain with the Precambrian rocks of the Canadian Shield; the remainder comprises the St. Lawrence Lowlands with their closely settled communities pulsating with history and, to the south and east, the Appalachian highlands with their gently undulating countryside in the Eastern Townships and the Shickshock Mountains and charmingly remote Gaspesia.

Here, in this land of vivid contrasts and historic memories, is preserved much of the old atmosphere of New France in the midst of a fast-emerging industrialism. Here, the great St. Lawrence began its dominant role in Canadian history as adventurous French-Canadian explorers, fur-traders, missionaries and soldiers opened up the interior of the continent. Still carrying the mark of the seigneurial pattern of colonization, narrow ribbons of settlement, of farmlands and villages cling tenaciously as in centuries past to the banks of the St. Lawrence, while the slender fields, defying further subdivision, drive the landless sons of Quebec farmers in increasing numbers to industrial centres. The quaint and stolid peasant society of old remains only in isolated pockets as Quebec's industrial revolution threatens the people's customs and traditions of life and thought. At the beginning of the twentieth century over 62.5 p.c. of the population were living in rural communities; in 1951 the percentage had fallen to 38.4 and manufacturing and construction had taken the lead over agriculture with regard to the numbers employed.

Standing majestic on the promontory of Cape Diamond, the City of Quebec, founded three and a half centuries ago by Champlain, best symbolizes the mingling of past and present and the preservation of French Canadian



Historic Quebec, founded in fields and its citadel are pic



is the only walled city in Canada. Its quaint narrow streets, twisting upwards around the rock, its battle-
reminders of its past, contrasting with the modern hustle of port and industry.

cultural life which is a distinguishing element in the Canadian national character. Here, 96 years ago, in this political, religious and intellectual centre of the French Canadians, the Fathers of Confederation fashioned, in a spirit of mutual understanding and compromise, the federal constitution of this nation of Canada.

Although current and potential lower North Shore developments are making Quebec an expanding supply centre for a far-reaching commercial hinterland, it is the City of Montreal, founded by Maisonneuve in 1642 at the foot of Mount Royal, that symbolizes the industrial revolution now sweeping through this traditionally rural province. Metropolitan Montreal constitutes a focal point of transportation and communications of all kinds, a major industrial, commercial and financial centre, and a great cosmopolitan area of many contrasts and innumerable cultures. Its manufactures are highly diversified, whether heavy industry, railway and other transport equipment, iron and steel products, non-ferrous metals, wood, petroleum refinery, electrical apparatus, textiles, foods and beverages. Lesser centres, in contrast, are characterized by one or more industries such as Three Rivers (newsprint and textiles), Sorel (ship-building and ilmenite smelting), Valleyfield (cottons), Sherbrooke and Granby (textiles), Windsor Mills (pulp and paper) and Thetford Mines (asbestos).



Steeply sloped roofs, practical in that they shed snow and provide a large insulation space against heat and cold, are typical of farmhouses in rural Quebec.

Ontario, the largest and most populous of the predominantly English-speaking provinces, shares with the province of Quebec both the fertile plains of the St. Lawrence-Great Lakes basin and the rugged, heavily forested, waterpowered and mineralized Canadian Shield. Into the newly surveyed townships of the Upper St. Lawrence, the Bay of Quinte and the Niagara Peninsula, came some 10,000 United Empire Loyalists in 1784, followed within the next decade by German folk from Pennsylvania and Europe, Americans from the Atlantic and mid-western States, Scottish and Irish immigrants in a steady stream. Fanning out from the shores of Lake Ontario and Lake Erie and across the Niagara Peninsula, they carved new towns and farming communities in the forests and built a pioneer economy based on agriculture, lumbering and local craftsmanship. A number of the earlier colonial settlements at such inland ports as Kingston, Belleville, Cobourg, Toronto, Hamilton, Port Dover, Sarnia, Goderich, Owen Sound and Collingwood—extending from Lakes Ontario and Erie to Lake Huron and Georgian Bay—became, in the course of a century, the centres of greatest aggregations of people, especially around the western end of Lake Ontario, in the southwest around Windsor and in the northeast where Ottawa, the capital of Canada, stands in all its charm and dignity at the junction of the Ottawa and Rideau Rivers.

The St. Lawrence inland waterway has dominated the development of both southeastern Quebec and southern Ontario since colonial times and today flows through the industrial heartland of the nation as a Seaway

providing ocean cargoes with navigation to the head of the Great Lakes, permitting a greatly augmented east-west and west-east movement of bulk cargoes of iron ore, grain, lumber, pulp and newsprint by lake freighters, and making possible an increased concentration of industrial enterprise at populous inland Canadian ports throughout its entire length of over 2,000 miles. But it is in the rugged, largely untapped and uninhabited portions of the Canadian Shield in northern Ontario and northwestern Quebec that one finds the firm bases of the current industrial revolution of these two provinces and the potential of a remarkable industrial future. For here, the close association of an abundance of forest and mineral resources with low-cost hydro-electric power and convenient transportation facilities have resulted in the establishment of thriving manufacturing industries engaged in pulp and paper production, sawmilling, metal smelting and refining, etc. Prominent among the older established communities and the new discoveries are such place-names as Quebec's Noranda-Rouyn, Malartic and Val d'Or (copper, silver, zinc, lead), Chibougamau and Murdochville (copper), Knob Lake-Schefferville and Mount Wright-Mount Reed (iron ore), Arvida, Beauharnois, Shawinigan Falls, Bersimis and Baie Comeau (power for aluminum and other smelting and for pulp and paper), and Ontario's Sudbury

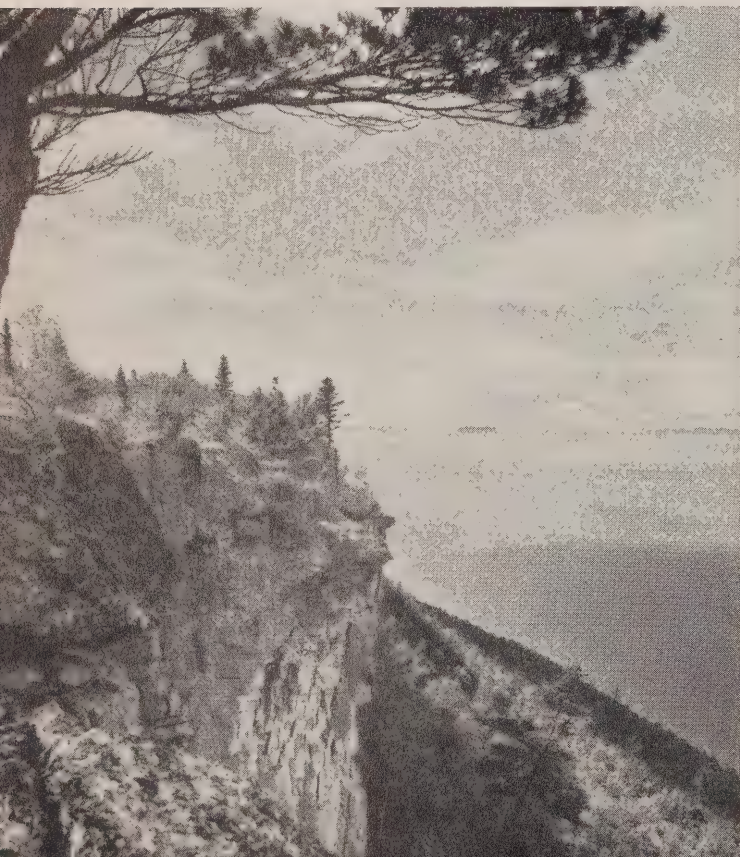
St. Helen's Island, in the harbour of Montreal, is a favorite picnic and recreation ground. The powder-house of the old fort is now used as a theatre, La Poudrière.



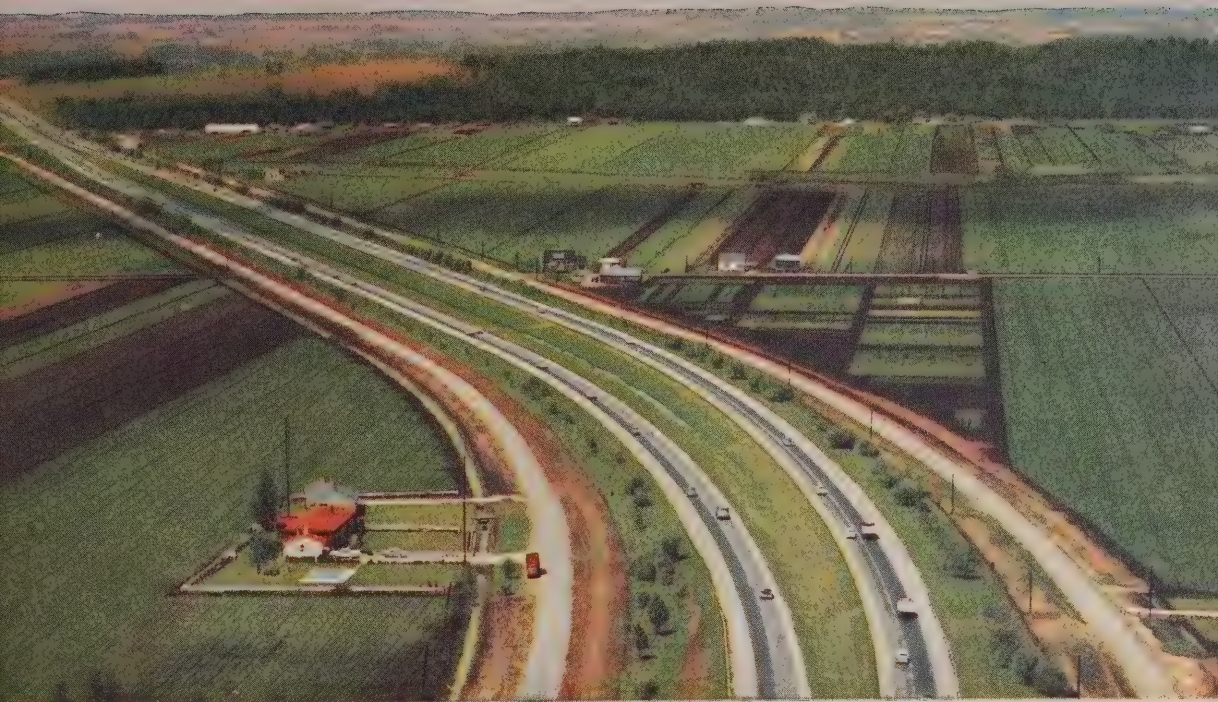
(nickel, copper, zinc), Porcupine and Kirkland Lake (gold, silver), Steep Rock (iron ore) and Blind River (uranium).

Turning eastward from the rock-bound but treasure-burdened Canadian Shield and from the heavily industrialized St. Lawrence River basin that have long played dominant roles in Canada's development, one comes to the old worn-down mountainous Canadian Appalachians that embrace the sea-girt islands and peninsulas comprising the Atlantic Provinces. Here, in the three Maritime Provinces and the Island of Newfoundland, the series of complex, eroded mountain ranges are interspersed with broad river valleys and sheltered uplands, while intricately and deeply indented rocky shore-lines, prominent headlands, and a succession of highlands and lowlands have led to a varied economy and numerous self-contained communities that have preserved a striking individuality. Thus, since earliest colonial times, fishing in the coastal areas has been the predominant occupation, with inland logging and lumbering in the uplands, agriculture in the scattered valleys and tidal marshlands, and mining in certain other areas subsequently becoming of major importance.

Centuries of history are manifest in the Atlantic Provinces. Newfoundland's story extends back to the time of John Cabot (1497) and the discovery of cod in abundance off the Grand Banks, to the first venturings of fishermen of many lands to inshore waters in search of safe harbours and landing stages, to the founding of hundreds of isolated outports hidden away in the bays and inlets of the rugged and barren shore. Nova Scotia first entered the stream of history as the homeland of the Acadians, especially in the vicinity of Minas Basin, Cobequid Bay and Chignecto Basin, where tidal marshlands supported a lush agricultural economy. English settlement



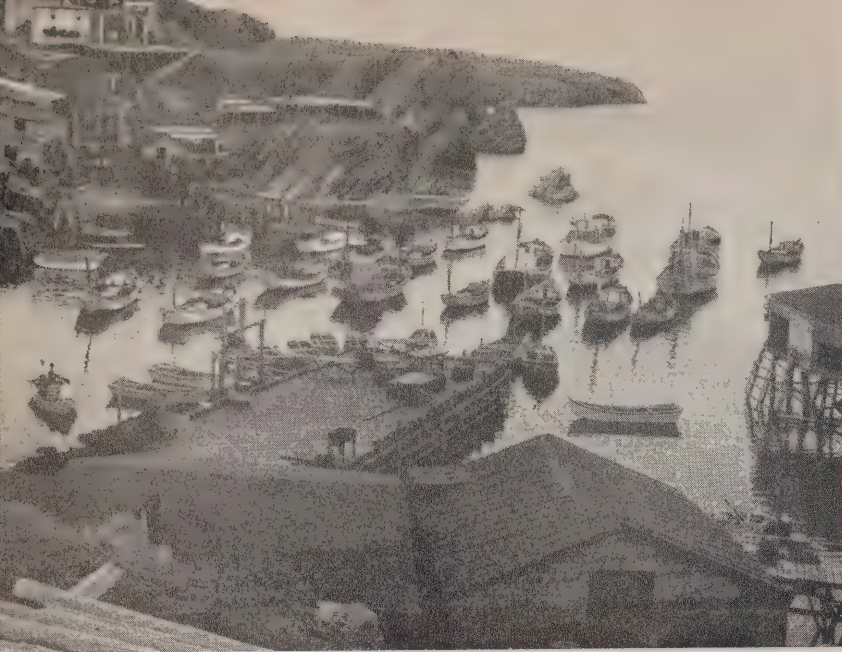
This rugged landscape is typical of northern Ontario with its ore-bearing rocks, its enormous forest cover and its abundant water resources for hydro-electric power—a combination of resources in Ontario, Quebec and British Columbia that have contributed greatly to the emergence of Canada as a major industrial power.



This famous area of former marshland, reclaimed and revitalized by Dutch agricultural settlers, now produces some of the finest flowers, fruits and vegetables in Canada.

began with the founding of Halifax (1749), the capture of Louisburg on the Island of Cape Breton (1758), and the migration of New England colonists to such south shore centres as Yarmouth, followed by Germans to Lunenburg, Yorkshiremen to Sackville and Amherst, Ulstermen to Londonderry, English to Gagetown and Miramichi, and Scottish to Pictou, Antigonish and Cape Breton. The coming of the United Empire Loyalists to the valley of the St. John River, far removed from the capital at Halifax, led to the establishment of the province of New Brunswick (1784), with Saint John as its major settlement and Fredericton as its capital. The garden province of Prince Edward Island, initially colonized by Scottish tenants on landed estates of absentee English landlords among whom the Island was divided by the Board of Trade and Plantations in London (1767), has for generations been a miniature land of great beauty, almost entirely under cultivation by the Canadian descendants of Scottish, English, Irish and United Empire Loyalist settlers.

The Atlantic Provinces share one of the world's richest fishery resources—cod, haddock and other groundfish are caught in abundance on the banks east of Newfoundland and Nova Scotia and in their coastal waters; herring and lobster abound in their inshore waters and the famous Malpeque Bay oysters are one of Prince Edward Island's richest harvests. ✓Today, the fisheries of the Atlantic Provinces are being modernized in order to maintain their competitive position as a major export and means of livelihood; the dory schooner and the fishing nets are being replaced by large modern draggers equipped with mechanical aids and the latest processing facilities for frozen fish products.



Attracted to the famous Grand Banks, Spanish pair-trawlers, Portuguese dories and Norwegian long-liners are as familiar sights as are Canadian dory schooners in the ports of Newfoundland. Newfoundland fishermen bring in more than one third of the sea fish landed by Canadians.

Of the land resources, the importance of the forest industries is indicated by the fact that about one-fifth of the surface of the Island of Newfoundland, 80 p.c. of Nova Scotia and more than 87 p.c. of New Brunswick is under forest cover. Agriculture is of little value in Newfoundland but in Prince Edward Island it is the main occupation. The whole Island is overlain with a rich red soil particularly suited to potato growing and livestock raising. Potatoes are also the major crop of the upper St. John valley in New Brunswick and apples and other fruit are specialties of the Annapolis and Cornwallis valleys of Nova Scotia, but otherwise mixed farming is general throughout the area.

In each part of the Canadian Appalachians, except Prince Edward Island, mineral resources add to the natural heritage. Although in New Brunswick production has lagged, large zinc-lead-pyrite deposits at Bathurst and the completion of the Beechwood power project on the St. John River are promising indications. In Nova Scotia, on the other hand, mining has long been prominent—its Cape Breton coal fields and those on the mainland across the Northumberland Strait account for over 50 p.c. of the nation's production. Indeed, the great iron and steel industry centred at Sydney is based on iron ore from Newfoundland and the coal fields of Nova Scotia. The province is also Canada's major source of gypsum and produces large quantities of salt.

Immense iron ore deposits on Bell Island, great pulp and paper mills at Grand Falls on the Exploits River and at Corner Brook, and the lead-zinc-copper mine at Buchans characterize the wealth of forest and mineral resources of the Appalachian portion of Newfoundland. Yet it is in the mainland Labrador portion of the Canadian Shield that the province may expect to find its greatest natural resources of timber, minerals and water power. In recent years Newfoundland has won the attention of the mining and pulp and paper world, and vast timber and mining concessions are being taken up in the Melville, Grand and Wabush regions of Labrador. Here flows, as yet unhindered, the Hamilton River, one of the greatest sources of undeveloped power on the Continent.

Over three thousand miles to the west, beyond the crest of the Rockies, lies Canada's third-largest province of British Columbia fronting on the Pacific. It is a land of exceedingly diversified topography convulsed by nature into seven or eight main compartments and countless separate pockets, a land of lofty-peaked mountain ranges, of rushing rivers and deep canyons, of dark green forested valleys and broad plateaus, a land lavish in dimensions, in beauty and in wealth of timber, minerals, water power and fisheries.

British Columbia's colourful history records the explorations of Captain James Cook along its rugged shoreline (1778), the navigations of Captain George Vancouver around the great Island bearing his name (1792), the journeys of dauntless explorers and fur-traders who pioneered the interior and found the paths that became the main communication routes of today—Alexander Mackenzie's overland route to the Pacific near Bella Coola (1793), David Thompson's exploration of the southern interior in the Thompson River region (1800-1811), and Simon Fraser's descent of the Fraser River by canoe (1808). Its story of colonization and settlement recounts the Hudson's Bay Company's opening of the new port at Fort Victoria (1843) as its western headquarters and the capital (1849) of the newly proclaimed Crown Colony of Vancouver Island, the inrush of miners and settlers following

Saint John, named by Champlain and settled by French colonists before 1650, is known as the Loyalist City, to which in 1783 some 20 ships brought 3,000 people—the first of an influx of 10,000—from the United States after the War of Independence.





The Confederation Chamber in Charlottetown, P.E.I., where the Fathers of Confederation met in 1864. The plaque being examined by visitors reads: "In the hearts and minds of the delegates who assembled in this room on Sept. 1, 1864 was born the Dominion of Canada."

the discovery of gold in the sand bars of the Fraser (1858) which prompted the creation of the Crown Colony of British Columbia out of mainland New Caledonia, the subsequent union of the two colonies in 1866, and the entry of the province of British Columbia into Confederation in July 1871 with Canada's promise of a transcontinental railway linking it with the East; these events helped to stay the northward advance of American 'Manifest Destiny' and to ensure the young nation of transcontinental dimensions and a western seacoast.

While Victoria, the capital, is renowned for its charm, its magnificent inner harbour and its gardens of unmatched beauty, and such communities as Nanaimo, Alberni, Campbell River, and Prince Rupert for their coal-mining, logging, sawmilling, pulp and paper, and commercial fisheries, the city and harbour of Vancouver, Canada's 'Pacific Gateway', characterizes most fully the present commercial and industrial life of British Columbia. For strategic Vancouver, linking land and sea communications, is the major centre of sawmilling, fish processing, petroleum refining, metal working, numerous manufactures, and extensive warehousing for the wealth of the hinterland and coastal waterways. Into Vancouver, by coastal shipping or rail or pipeline for processing, sale or transshipment, pour Douglas fir, western hemlock and red cedar from Vancouver Island or far up the coast, paper from Powell River or Ocean Falls, salmon and halibut from coastal and off-shore waters, copper from Britannia, lead, zinc and silver from the famous Sullivan mine at Kimberley, gold from Bridge River, aluminum from Kitimat, petroleum and natural gas from Alberta and the Peace River district, beef cattle from the Cariboo country, fresh fruits and vegetables from the Okanagan Valley, and even grain from the western prairies.

The expansive western prairies, stretching 1,000 miles from the western edge of the Canadian Shield in the vicinity of the Rainy River-Kenora districts of western Ontario to the crest of the Rocky Mountains, comprise three step-like formations across the northern portion of the great central plains of the Continent. These three broad steps are divided by two notable scarps—the Manitoba Escarpment dividing the Regina plains of southern Saskatchewan from those of Manitoba's Red River, and the Missouri Coteau dividing the central Saskatchewan plains and those of southwestern Manitoba from the Alberta plains and those of southwestern Saskatchewan.

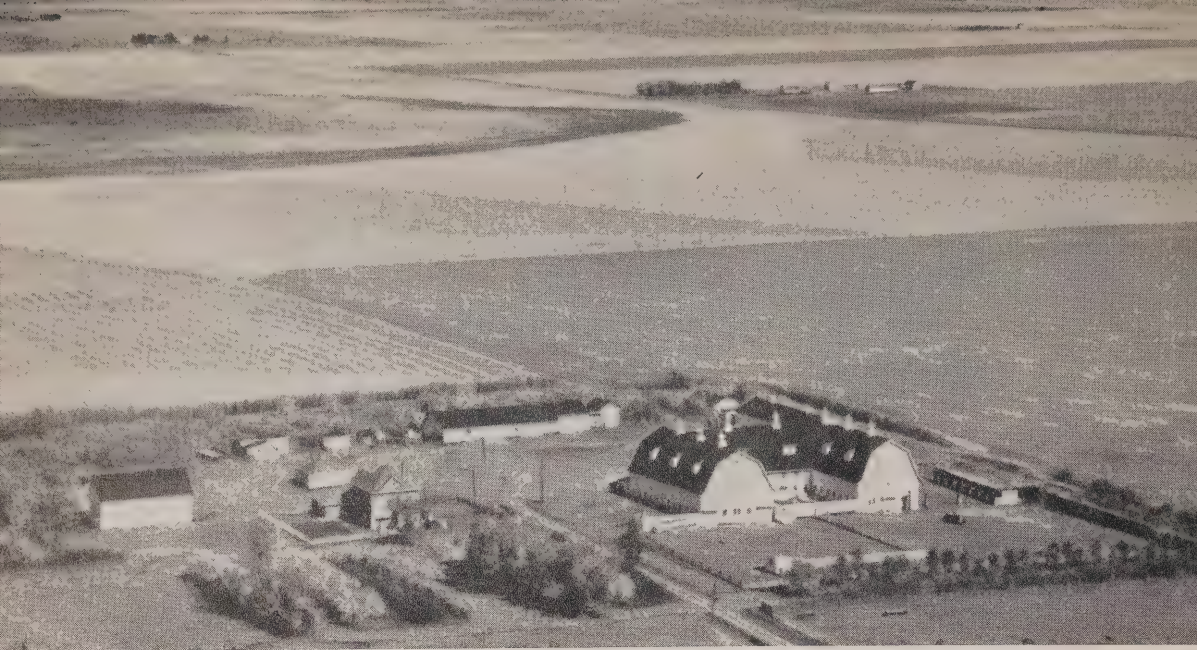
Here, glaciation produced wide lakes and laid down fertile clays and other marine sediments which today form some of the deepest and most

productive agricultural soils in Canada. The Red River Valley, in the ancient bed of glacial Lake Agassiz, and the Regina and Saskatoon plains are good examples. Elsewhere the scene is one of rather hummocky ground, innumerable morainic sloughs and slightly rolling surfaces, suited especially to ranching. Breaching widely the escarpments that divide the steps are the two long arms of the Saskatchewan River and its tributaries flowing from the Rocky Mountains to Hudson Bay.



Of the total area of 350,000 square miles in British Columbia, nearly three-quarters of it is more than 3,000 feet above sea level, but most of its people live on the coast, in the arable valleys or on forest range land.

For two hundred years prior to Canada's acquisition from Great Britain of this vast northwestern territory (1869-70), which brought to fruition the great design of the Fathers of Confederation of a Canadian nation extending from the Atlantic to the Pacific, the fur trade was almost its only economic activity. The rivalry of the Hudson's Bay Company and the Nor' Western (1784-1821) resulted in an expansive network of trading posts and forts at strategic points along such interior waterways as the Red and Assiniboine, the Churchill and the Nelson, the two arms of the Saskatchewan and the northern lakes. The exploring fur traders and voyageurs in their canoes,



In ages past the beds of vast inland lakes, today the great plains of the provinces of Manitoba, Saskatchewan and Alberta are the largest source of Canada's grain production: 4.3 p.c. of the world's wheat, 7.4 p.c. of its barley and 9.5 p.c. of its oats. Saskatchewan and Alberta farms average nearly a square mile in size.

York boats and Red River carts pioneered the river and overland routes of the prairies and chose the future sites of many of the West's most flourishing communities.

The province of Manitoba, established in 1870, centred about the old French-English-métis settlement at the junction of the Red and Assiniboine Rivers, augmented in turn by group colonies of French-Canadian, Mennonite and Icelandic and by a steady movement of settlers from Ontario and the British Isles into the open prairies. By 1881, some 40,000 immigrants were attracted to the new frontier and, with the construction of the main line of the Canadian Pacific Railway across the broad prairies in the early 1880's and the subsequent launching of an energetic immigration policy based upon a free homestead system, the agricultural era of the great West exploded into being in one of the swiftest and most dramatic developments in modern



Fort Garry Gate, originally set in the stone wall surrounding the fort built by the Hudson's Bay Company in the 1830's in what is now Winnipeg.

times. The two new Prairie Provinces of Saskatchewan and Alberta, established in 1905, were, in conjunction with Manitoba, soon to become one of the major grain-growing regions of the world.

Although the story of subsequent development in the Canadian West during the first sixty years of the present century is highlighted elsewhere in this volume (pp. 8 to 17), it should be noted that while the major source of Canada's agricultural wealth is in the prairies, vast reserves of coal, natural gas and petroleum also lie below the fertile plains of the Prairie Provinces, of northeastern British Columbia and of the Mackenzie valley. The remarkable expansion in the rate of exploration, discovery, development, refining and marketing of petroleum and natural gas since the opening of the Leduc field (1947), together with significant developments in base metal mining in the northwestern fringes of the Canadian Shield, have greatly broadened and strengthened not only the prairie economy but that of Canada as a whole. Prominent among the contributing factors in this welcomed diversification of the economy of the Prairies have been the gold, silver, zinc, copper and nickel production of Manitoba's Flin Flon, Lynn Lake and Thompson, the uranium production of Saskatchewan's Beaverlodge and Uranium City, and the petrochemical industry of Alberta, not to mention the general upsurge in new manufacturing, construction and distribution industries in the cities of the plains.

Some 1,500,000 sq. miles or about 40 p.c. of Canada's total area comprise the Yukon Territory and the Northwest Territories, a vast northland of Arctic and sub-Arctic expanse lying beyond the northern boundary of the provinces and extending through its Arctic Archipelago to the Pole. Throughout this vast area climatic conditions and surface features vary greatly. Between the northward extension of the Rockies and the western rim of the Precambrian Shield lie the plains of the Mackenzie valley where the winters are cold, the short summers warm, the countryside wooded, the limited soil potentialities for small-scale farming, the rocks in places mineralized and transportation possibilities excellent. Extending eastward to the shores of Hudson Bay and northward from Churchill is an Arctic region devoid of trees and possessing very severe winters and short cool summers; underlain with mineral-bearing Precambrian rocks of the Canadian Shield,

Totem poles, the Indian form of recorded biography, adorn a trading-post in British Columbia. Originally carved as house supports, and depicting events in the life of a band chief or a famous ancestor, totem poles became a status symbol after the arrival of the white man with metal tools and were erected outside the carver's house. Totem pole carving flourished in the 19th century, and has recently been revived mainly as a tourist attraction and a conscious art form.





The Yukon is heavily forested. Not far from Aklavik, nearly 200 miles north of the Arctic Circle, are stands of white spruce 100 feet in height and big enough to produce saw logs 18 to 24 inches in diameter.

mining has already led to some scattered settlement. Beyond lies the Eastern Arctic to the far shores of Lancaster Sound and on through the remoter Arctic islands to the towering mountains of Ellesmere.

For centuries these immense territories of Canada's Northland knew only the audacious explorers searching for a Northwest Passage to the treasures of the Orient, or fur traders, whalers and missionaries at remote trading posts, or a few thousand nomadic Indians and Eskimos well adapted to the Arctic environment. Then, through two world wars, came increasing Canadian consciousness of the North at the aerial crossroads between two great continental masses; the Alaska Highway was built, chains of airfields for the Northwest and Northwest Staging Routes constructed, oil facilities provided at Norman Wells, and numerous meteorological and radio stations erected.

Today, a new minerally rich Northland is emerging as geological reconnaissance indicates a potential mineral wealth outstripping all other known Canadian sources. Although the Klondike remains a leading producer of gold sixty-two years after the famous 'gold rush', the Dawson and Yellowknife areas have a thriving gold-mining industry. The Keno Hill-Mayo region near Dawson is a rich producer of silver-lead-zinc ores, Port Radium on the east shore of Great Bear Lake a leading source of uranium, Pine Point on the south shore of Great Slave Lake famous for its rich base metal deposits, Rankin Inlet on the western shore of Hudson Bay for nickel and finally, the remote Arctic islands where numerous companies are currently conducting preliminary geological explorations for oil. Indeed, much additional knowledge of the mineral wealth of the North will result from current Canadian scientific expeditions being carried on with a view to mapping the oceanographic features of Canada's continental shelf off its Arctic territories.

Land and Water Areas

The following table shows the land and freshwater areas of Canada distributed by provinces.

Approximate Land and Freshwater Areas of the Provinces and Territories

Province or Territory	Land	Freshwater	Total
	sq. miles	sq. miles	sq. miles
Newfoundland (incl. Labrador).....	143,045	13,140	156,185
Prince Edward Island.....	2,184	—	2,184
Nova Scotia.....	20,402	1,023	21,425
New Brunswick.....	27,835	519	28,354
Quebec.....	523,860	71,000	594,860
Ontario.....	344,092	68,490	412,582
Manitoba.....	211,775	39,225	251,000
Saskatchewan.....	220,182	31,518	251,700
Alberta.....	248,800	6,485	255,285
British Columbia.....	359,279	6,976	366,255
Yukon Territory.....	205,346	1,730	207,076
Northwest Territories.....	1,253,438	51,465	1,304,903
Canada.....	3,560,238	291,571	3,851,809

The total area classified by tenure is as follows:—

<i>Sq. miles</i>	<i>Sq. miles</i>
Privately owned or in process of alienation from the Crown... 389,385	Provincial lands other than Provincial Parks and provincial forest reserves..... 1,630,982
Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations..... 1,531,328	Provincial Parks..... 58,131
National Parks..... 29,280	Provincial forest reserves.. 203,294
Indian reserves..... 9,223	
Federal forest experiment stations..... 186	TOTAL AREA..... 3,851,809

The high figure for federal land is accounted for by the fact that it includes the total area of the Yukon and Northwest Territories. All unalienated lands within the provinces are administered by the provincial governments. Of Canada's land area of 3,560,238 sq. miles, 7.6 p.c. is occupied agricultural land—under crop, in woodland or unimproved. Forested land, both productive and unproductive, accounts for 48 p.c. of the total and the remainder includes rock, muskeg, urban land, road allowances, etc.

Running the rapids in the swift rivers of the northern prairies demands great skill and daring. During the spring spate, rivers which are a mere trickle in the autumn often become roaring torrents, destroying bridges and flooding the valleys.



Climate

Canada is a land of many climates. Frigid wind-swept barrens, hot sun-ripened grain fields, lush farmlands, orchards and vineyards, dusty scanty grasslands and wet heavily forested slopes are all part of the Canadian landscape. Considering the extent of the country, its location on the globe and its dominant physical features, such variability is to be expected. None of the Canadian climates have the genial qualities of those in more tropical latitudes. Indeed, most of the population lives in a very changeable weather zone, but a type of weather zone known to have developed some of the more energetic peoples of the world. The harshness of the climates has proved a stimulation—a challenge rather than a frustration—and the cold inhospitable wilderness which yesterday was such a deterrent to settlement and development, has under present living conditions become liveable and enjoyable.

Canada may be divided into six general climatic regions. With the exception of the Arctic and sub-Arctic regions, they lie mostly within the cool temperate zones, characterized by relatively short but humid and sometimes hot summers and by long winters. Snow is common to the entire



The Canadian winter is exploited to the full by amateur athletes. At some ski clubs it is common to find 6,000 skiers out on a Saturday or Sunday.

country, though generally heavier in Eastern than in Western Canada. In the Pacific region, a narrow strip along the coast west of the mountains, mild winters and cool summers are ensured by the air currents from the ocean. However, the Cordillera region of mountains, plateaus and valleys extending through most of British Columbia and Yukon Territory is by far the most complex climatic region in Canada. Temperature variations, determined more by altitude than latitude, are greater than anywhere else in the country, generally increasing in severity toward the east. In the prairie region, which takes in all the settled agricultural land of Alberta, Saskatchewan and Manitoba except the Peace River country, rainfall is light and semi-arid to arid conditions, with great extremes of temperature, prevail. Southern Ontario, Quebec and the Atlantic Provinces are included in the fourth region. Here the climates are somewhat moderated, especially in summer, by the effects of the Great Lakes and the Atlantic Ocean. The summers are humid and quite warm and the winters generally less severe than in other regions. The sub-Arctic zone or northern climatic region runs in a broad band from the interior northwest of the country, south of Hudson Bay to the Great Lakes and includes most of Quebec and Labrador. In this region extremely low temperatures often occur during winter and very hot temperatures may occur in summer. Precipitation is variable but the land is generally snow-covered for more than half the year. North of the treeline is the Arctic region which is the true desert area of Canada. Snowfall is relatively light but lasting, since sub-zero conditions have a longer season here than elsewhere. Surprisingly, however, Canada's record low temperatures are not observed in this region.

Temperature and Precipitation Data for Certain Localities in Canada
(Long-term averages)

Station	Temperature (deg. Fahrenheit)					Precipitation Av. Annual (inches)	Bright Sunshine (hrs. per annum)	Freezing Temper- ature (days)
	Av. Annual	Av. Jan- uary	Av. July	Extreme High Recorded	Extreme Low Recorded			
Gander, Nfld.....	38.9	18.6	61.6	96	-15	39.50	1,413	190
St. John's, Nfld. ...	41.0	24.0	60.0	93	-21	53.09	1,464	179
Charlottetown, P.E.I.....	42.5	18.8	66.6	98	-27	43.13	1,857	154
Halifax, N.S.....	44.6	24.4	65.0	99	-21	54.26	1,876	134
Sydney, N.S.....	42.8	22.7	65.0	98	-25	50.61	1,745	162
Saint John, N.B....	42.0	19.8	61.8	93	-22	47.39	1,902	148
Sept Îles, Que.....	33.0	3.2	59.2	90	-46	41.94	..	210
Montreal, Que.....	43.7	15.4	70.4	97	-29	41.80	1,811	143
Port Arthur-Fort William, Ont....	36.8	7.6	63.4	104	-42	31.62	1,797	208
Toronto, Ont.....	47.0	24.5	70.8	105	-26	30.93	2,047	123
Churchill, Man....	18.7	-17.3	54.7	96	-57	15.01	1,646	255
Winnipeg, Man....	36.6	0.6	68.4	108	-54	19.72	2,126	194
Regina, Sask.....	36.1	2.3	66.6	110	-56	15.09	2,264	214
Edmonton, Alta....	36.8	7.7	62.9	99	-57	17.63	2,173	196
Fort Nelson, B.C....	30.2	-7.3	61.7	98	-61	16.37	..	216
Victoria, B.C.....	50.2	39.2	60.0	95	-2	26.19	2,093	20
Whitehorse, Y.T....	31.1	5.2	56.2	91	-62	10.67	..	219
Aklavik, N.W.T....	15.8	-18.2	56.4	93	-62	9.77	..	261
Frobisher Bay, N.W.T.....	15.8	-15.8	45.7	76	-49	13.53	..	273

The People of Canada

THE progress and development of a country is dependent upon its human resources, their numbers and their qualities, their requirements and their ambitions. The majority of Canadians now occupying this northern half of the North American Continent are the descendants of immigrants who came throughout the years, sometimes in large groups when, for economic or political reasons, they were anxious to find new homes in a new land, and sometimes singly in the spirit of adventure. These people, bringing with them the traditions of their various races, cultures and creeds, settled in this new environment and became part

of it but, at the same time, contributed to the physical and cultural diversity characteristic of the nation. Perhaps three-quarters of the people are of two main stocks—French and British—and one-quarter are mainly of other European origins. Linguistically, however, there continue to be two major groups—the English-speaking and the French-speaking. Culturally, no definite Canadian pattern has fully emerged but there is no doubt that art, literature and way of life bear the imprint of varied backgrounds. Many shades of religious faith also are embraced by the Canadian people; there is no state church and all groups are free to worship as they wish.

It is interesting to note that, through periods of light and heavy immigration, the recordings of population status taken every ten years from 1871 to 1951 show that at each period a fairly consistent proportion of the population was born outside the country, a proportion that fluctuated between 13 p.c. and 23 p.c. Nevertheless, the growth of the population, until very recently, was relatively slow. The hardships of pioneer life in a rugged, forbidding, northern land whose great treasures had not begun to be realized, a country that required the coming of modern transportation and communication facilities and the progress of science and technology to conquer its vast distances and to begin the development and utilization of its riches of forest, river and rock, were a deterrent to settlement. These and the attractions of a progressive and more advanced nation to the south kept the population of Canada small, so that by the end of the Second World War

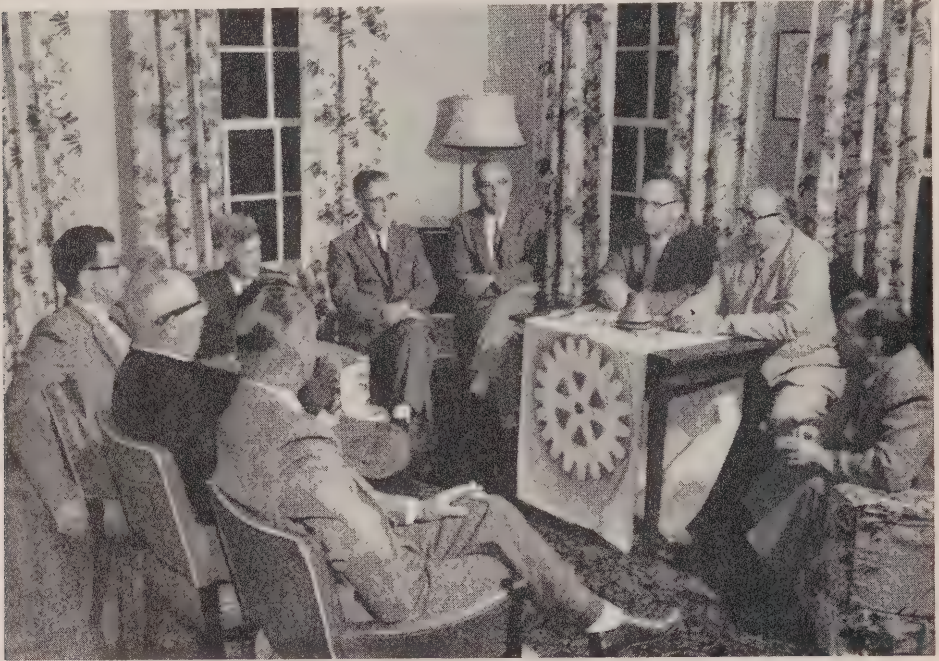




it had not yet reached 12,500,000. What is most remarkable is the fact that these few people, hardly a quarter as many again as the number living in the metropolitan area of New York City, had so used their capabilities and resources that, in the short time since the first provinces joined together in Confederation, they had been able to build a united bi-cultural and bilingual nation of continental proportions, a nation that now ranks high in the industrial and political world; one that has become the sixth largest nation in manufacturing output and the fourth largest in trade and whose voice is heard and respected in international affairs. This is a nation whose people have obtained all that is best from the evolution of industry, whose standard of living is close to the highest in the world and who, despite the rush of industry and commerce, have retained a consciousness of the place of tradition, culture and natural beauty in the life of the nation.

The changes that have taken place since the end of the War are adding a new chapter to the story of Canadian population growth and development. The population base has broadened so rapidly as to reach an estimated level of 18,000,000 during the course of 1960 and an active and phenomenally advancing economy has been able to absorb that increase. At the same time economic advancement has had a tremendous effect on family formation and structure, on immigration and therefore on ethnic and religious composition, on age and sex distribution, on occupations and on internal movement. Only the records of the decennial census give a complete picture of

population status and so far removed, in point of years and progress, are the census of 1951 and even the partial census of 1956 that their results give little indication of the population structure of today. Annual estimates of numbers and age and sex distribution are helpful in the intervening years but the complete detailed story will only emerge from the results of the 1961 Census.



Canadians are noted as "joiners". More than 1,200 organizations flourish, their members uniting for the furtherance of their mutual interest in business, community effort, religion, racial background, health, welfare and social activities.

Elements of Population Growth

The elements of population growth have a simple two-plus-two logic. Population grows by natural increase, or the excess of births over deaths, plus the excess of immigration over emigration. While each of these factors has played a significant historical role in increasing Canada's population, natural increase has recently been accounting for nearly three-quarters of the total annual gain. During the early war years it was difficult to remember the gloomy predictions of decline in the populations of various countries, and the downward trend in fertility of the 1930's was decisively reversed and replaced by a 'baby boom'. Yet even after this boom had subsided in other countries and their birth rates had shown unmistakable signs of swinging back to the pre-war level, Canada's natural population growth continued to gather momentum, which was supplemented by an upsurge in immigration. These trends resulted in significant modifications in population

structure at a time when advances in industrial technology were stimulating a large-scale geographical and occupational redistribution of the population. Social and economic changes resulted in a decrease in farm population, a heavy influx into metropolitan centres and a trend toward suburbanization in some of the older cities.

Canada's population growth over the past two decades has by no means been evenly distributed among the provinces. While British Columbia's population has increased at double the Canadian rate or by more than 70 p.c. and the population of Quebec, Ontario and Alberta each by more than 40 p.c., Saskatchewan's population has actually declined. The uneven rates of increase among the provinces imply a pattern of internal migration reinforcing the natural growth in British Columbia and, to a lesser degree, in Ontario but depressing the growth in the other provinces below what might have been expected from natural increase alone.

Population Growth, by Province, for Census Periods 1901-56

Province	1901	1911	Change 1901-11	1921	Change 1911-21	1931	Change 1921-31
	No.	No.	p.c.	No.	p.c.	No.	p.c.
Newfoundland.....	—	—	—	—	—	—	—
Prince Edward Is. . .	103,259	93,728	-9.2	88,615	-5.5	88,038	-0.7
Nova Scotia.....	459,574	492,338	7.1	523,837	6.4	512,846	-2.1
New Brunswick.....	331,120	351,889	6.3	387,876	10.2	408,219	5.2
Quebec.....	1,648,898	2,005,776	21.6	2,360,510	17.7	2,874,662	21.8
Ontario.....	2,182,947	2,527,292	15.8	2,933,662	16.1	3,431,683	17.0
Manitoba.....	255,211	461,394	80.8	610,118	32.2	700,139	14.8
Saskatchewan.....	91,279	492,432	439.5	757,510	53.8	921,785	21.7
Alberta.....	73,022	374,295	412.6	588,454	57.2	731,605	24.3
British Columbia . .	178,657	392,480	119.7	524,582	33.7	694,263	32.3
Canada ¹	5,371,315	7,206,643	34.2	8,787,949	21.9	10,376,786	18.1
		1941	Change 1931-41	1951	Change 1941-51	1956	Change 1951-56
		No.	p.c.	No.	p.c.	No.	p.c.
Newfoundland.	—	—	—	361,416	—	415,074	14.8
Prince Edward Is.....	95,047	8.0	98,429	3.6	99,285	0.9	
Nova Scotia.....	577,962	12.7	642,584	11.2	694,717	8.1	
New Brunswick.....	457,401	12.0	515,697	12.7	554,616	7.5	
Quebec.....	3,331,882	15.9	4,055,681	21.7	4,628,378	14.1	
Ontario.....	3,787,655	10.4	4,597,542	21.4	5,404,933	17.6	
Manitoba.....	729,744	4.2	776,541	6.4	850,040	9.5	
Saskatchewan.....	895,992	-2.8	831,728	-7.2	880,665	5.9	
Alberta.....	796,169	8.8	939,501	18.0	1,123,116	19.5	
British Columbia.....	817,861	17.8	1,165,210	42.5	1,398,464	20.0	
Canada ¹	11,506,655	10.9	14,009,429	21.8	16,080,791	14.8	

¹ Includes the Yukon and Northwest Territories.

Annual estimates of population since the 1956 Census show that British Columbia is continuing to show the greatest rate of increase, followed by Alberta, the Northwest Territories and Ontario.

Estimated Population June 1, 1959, and Percentage Increase, 1956-59

Province	Estimated Population	Increase 1956-59	Province or Territory	Estimated Population	Increase 1956-59
	No.	p.c.		No.	p.c.
Newfoundland.....	449,000	8.2	Saskatchewan.....	902,000	2.4
Prince Edward Is.....	102,000	3.0	Alberta.....	1,243,000	10.7
Nova Scotia.....	716,000	3.0	British Columbia ...	1,570,000	12.2
New Brunswick.....	590,000	6.3	Yukon.....	13,000	8.3
Quebec.....	4,999,000	8.0	Northwest Territories	21,000	10.5
Ontario.....	5,952,000	10.1			
Manitoba.....	885,000	4.1	Canada.....	17,442,000	8.5

In addition to these interprovincial shifts there have been decided movements within each province from rural to urban areas. This shift is by no means a new phenomenon. It has been under way since before the turn of the century and is, of course, a reflection of the steady decline in the importance of employment in agriculture compared with that in manufacturing, trade and services. At the beginning of the present century, 45 p.c. of the male labour force was employed in agriculture as compared with about 33 p.c. at the time of the 1941 Census. For the twenty years between 1921 and 1941 the number of males employed in agriculture remained fairly stable at around 1,000,000 but by 1951 it had declined by 270,000. Since 1951 the number has continued downward so that the proportion of males employed in this industry is now less than 20 p.c. of the total male labour force. It is officially estimated that the decline in the relative importance of agricultural employment in the Canadian economy may be expected to continue to 1980 when the proportion of the labour force so employed will be less than 8 p.c.

Rural-Urban Population Change, by Province, 1951-56

Province or Territory	Rural			Urban		
	1951 ¹	1956	Change 1951-56	1951	1956	Change 1951-56
	No.	No.	p.c.	No.	No.	p.c.
Newfoundland.....	207,057	229,822	11.0	154,359	185,252	20.0
Prince Edward Island...	73,744	68,815	- 6.7	24,685	30,470	23.4
Nova Scotia.....	287,236	295,623	2.9	355,348	399,094	12.3
New Brunswick.....	296,228	300,326	1.4	219,469	254,290	15.9
Quebec.....	1,340,340	1,387,540	3.5	2,715,341	3,240,838	19.4
Ontario.....	1,221,717	1,302,014	6.6	3,375,825	4,102,919	21.5
Manitoba.....	336,961	339,457	0.7	439,580	510,583	16.2
Saskatchewan.....	579,258	558,662	- 3.6	252,470	322,003	27.5
Alberta.....	489,003	487,292	- 0.5	450,498	635,824	41.1
British Columbia.....	340,466	371,997	9.3	824,744	1,026,467	24.5
Yukon and N.W.T.....	19,782	24,388	23.3	5,318	7,115	33.8
Canada.....	5,191,792	5,365,936	3.4	8,817,637	10,714,855	21.5

Areas for 1951 adjusted to 1956 boundaries.

Over the past two decades the population residing in the metropolitan areas has increased by 55 p.c. which may be compared with the 40-p.c. increase in the total number of people in the country. The 'metropolitan community' is usually considered a creation of the twentieth century, though urbanization was well under way in the late 1800's. Metropolitan communities—like urban centres—cannot be defined in terms of numbers, but a review of rates of growth and changing proportions is extremely enlightening, since the development of the metropolitan community seems inevitably to involve a process of relative population deconcentration. One of the most simple indications of metropolitan emergence is rapid population growth at the periphery of large cities. At the time of the 1956 Census there were 6,282,000 persons residing in the fifteen metropolitan areas of Canada, accounting for 40 p.c. of the total population and close to 60 p.c. of the urban population. In the five-year period between 1951 and 1956, about half the increase in the total population of Canada occurred in these fifteen metropolitan areas.

The gateway to the north, the hub of a fine agricultural community, the birthplace of commercial aviation in Canada and the centre of spectacular oil discoveries, Edmonton has grown, in 50 years, from a town of 5,000 to a sprawling ever-spreading city of a quarter of a million. Less than 100 years ago, in 1874, its first house was built; it is now preserved as a historic site.



Population Increase in Metropolitan Areas, 1951 and 1956

Metropolitan Area	1951 ¹	1956	Increase		
			Metro- politan Area	City Proper	Fringe Area
	No.	No.	p.c.	p.c.	p.c.
Calgary.....	140,645	200,449	42.5	40.8	61.1
Edmonton.....	173,748	251,004	44.5	41.6	77.1
Halifax.....	133,931	164,200	22.6	9.0	46.7
Hamilton.....	272,327	327,831	20.4	15.0	37.8
London.....	128,977	154,453	19.8	6.7	56.9
Montreal.....	1,395,400	1,620,758	16.2	8.6	36.8
Ottawa.....	292,476	345,460	18.1	9.9	36.4
Quebec.....	274,827	309,959	12.8	4.1	25.7
Saint John.....	78,337	86,015	9.8	3.4	21.6
St. John's.....	67,313	77,991	15.9	8.0	44.8
Toronto.....	1,117,470	1,358,028	21.5	-1.2	56.3
Vancouver.....	561,960	665,017	18.3	6.1	37.8
Victoria.....	108,285	125,447	15.8	6.3	24.4
Windsor.....	163,618	185,865	13.6	1.6	46.6
Winnipeg.....	354,069	409,121	15.5	8.2	30.1
Totals.....	5,263,383	6,281,598	19.3	9.0	41.7

¹ Areas for 1951 adjusted to 1956 boundaries.

Life Expectancy. The growth of absolute numbers in the Canadian population is, of course, only one part of the population story. Another dramatic aspect concerns the great gains made in life expectancy. Between 1931 and 1956 life expectancy at birth increased from 60 to 67.6 years for males and from 62 to 72.9 years for women. The increases have been predominantly at the younger ages, particularly in infancy, and have diminished with advanced age. For example, while 7.6 years have been added to the life expectancy of a newborn male since 1931, over three years have been added to a five-year-old, over two years to a 20-year-old, over three-quarters of a year to a 40-year-old and a bare quarter-year to a 60-year-old male. During the same period, 10.8 years were added to the life expectancy of a newborn female, a five-year-old female gained over seven years, a 20-year-old six years, a 40-year-old 3.7 years and a 60-year-old just over two years. Thus longevity has improved for both sexes but more so and at all ages for females, whereas there has been only slight improvement for males beyond middle life. Relatively stationary death rates have been established from about 50 years of age onwards for males and from about 80 for females.

The improvement in life expectancy, particularly among children and adolescents is a result mainly of reduction in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the last two decades. As roughly 10 p.c. of all annual deaths occur among infants and an additional 75 p.c. among persons over 50, any further improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combatting diseases associated with middle and old age, such as cardio-vascular-renal conditions and cancer.

Expectation of Life, 1931 and 1956

Age	1931		1956		Age	1931		1956	
	Male	Female	Male	Female		Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.		yrs.	yrs.	yrs.	yrs.
At birth...	60.00	62.10	67.61	72.92	45 years...	27.79	28.87	28.28	32.09
1 year...	64.69	65.71	69.04	73.99	50 " ..	23.72	24.79	24.04	27.65
2 years...	64.46	65.42	68.21	73.15	55 " ..	19.88	20.84	20.12	23.38
3 " ..	63.84	64.75	67.31	72.24	60 " ..	16.29	17.15	16.54	19.34
4 " ..	63.11	63.99	66.38	71.31	65 " ..	12.98	13.72	13.36	15.60
5 " ..	62.30	63.17	65.45	70.35	70 " ..	10.06	10.63	10.51	12.17
10 " ..	57.96	58.72	60.67	65.51	75 " ..	7.57	7.98	7.98	9.15
15 " ..	53.41	54.15	55.86	60.64	80 " ..	5.61	5.92	5.89	6.75
20 " ..	49.05	49.76	51.19	55.80	85 " ..	4.10	4.38	4.27	4.97
25 " ..	44.83	45.54	46.61	50.97	90 " ..	2.97	3.24	3.07	3.67
30 " ..	40.55	41.38	41.98	46.17	95 " ..	2.14	2.40	2.18	2.74
35 " ..	36.23	37.19	37.34	41.40	100 " ..	1.53	1.77	1.52	2.05
40 " ..	31.98	33.02	32.74	36.69					

Immigration. In the past decade Canada has admitted more than 1,500,000 immigrants and has become the second largest immigrant-receiving country. This impressive total includes persons from Commonwealth countries, displaced persons, farm families from the Netherlands, relatives of Canadian residents and immigrants selected for occupational placement. Canada's 282,164 immigrants of 1957 set a 43-year record but there has been a marked decline to 124,851 in 1958 and to 106,928 in 1959. The recent lower level is attributed in large part to measures applied in 1957 and continued since as a means of keeping the immigrant flow at a realistic level, though improved economic conditions in Europe undoubtedly had some effect. At present Canada is pioneering in the humanitarian settlement of immigrants who, because of tuberculosis, have been stranded for years in temporary refugee camps in Europe.

Half of the immigrant arrivals in 1957 were destined to augment Canada's labour force. The largest group of workers, 12,792, expected to find employ-

A family of refugees lands in Canada during World Refugee Year.



ment in the manufacturing, mechanical and construction trades; 9,740 were listed as hairdressers, domestics, nurses' aides and in other service occupations; 6,947 were in professional occupations; and 5,459 in clerical categories. Workers destined to farming and agricultural employment numbered 4,965 and general labourers 8,940. Many of the latter were sponsored by Canadian residents, mainly relatives. The youthful character of the immigrant population is indicated by the fact that nearly two-thirds were under 30 years of age, 53 p.c. were in the 20-39 age group, which has the highest potential rate of productivity, and only 13 p.c. were over 45 years of age.

Immigration and Population, 1950-59

Year	Immigration	Estimated Population, June 1		
		Canadian-Born	Foreign-Born	Total
	No.	'000	'000	'000
1950.....	73,912	11,694	2,018	13,712
1951.....	194,391	11,949	2,060	14,009
1952.....	164,498	12,227	2,232	14,459
1953.....	168,868	12,516	2,329	14,845
1954.....	154,227	12,826	2,461	15,287
1955.....	109,946	13,151	2,547	15,698
1956.....	164,857	13,470	2,611	16,081
1957.....	282,164	13,806	2,783	16,589
1958.....	124,851	14,128	2,920	17,048
1959.....	106,928	14,456	2,986	17,442



Babies arrive in Canada at the rate of almost one a minute. These first opened their eyes in Kitimat, B.C.

Births, Marriages and Deaths. The most dynamic element in the growth of Canada's population has been a high birth rate. From more than 29 births per thousand population in 1921, the rate declined steadily to less than 21 in 1937. After a plateau of 24 reached during the war years, the rate rose to peaks of 28.9 in 1947 and 28.5 in 1954. In 1958 it remained as high as 27.6 and is expected to have reached 27.9 in 1959. Canada's current birth rate is one of the highest among those of all industrialized countries.

During 1958, 470,118 infants were born alive, at the rate of almost one a minute. Almost one-third were to residents of Ontario, 30 p.c. to residents of Quebec and 8.5 p.c. to residents of British Columbia. Ontario has had more births than Quebec each year since 1953, although Quebec has had a higher birth rate. Among the ten provinces, Newfoundland had the highest rate at 33.8 per thousand population, followed by Alberta at 30.7, Quebec 29.0 and New Brunswick 28.4; rates for the other provinces ranged from a low of 24.9 in Manitoba to 26.9 in Saskatchewan.

Back in the 1940's, in the early years of the 'baby boom', a third of all babies born alive in Canada were the first child born to the family. But the picture has now changed and, in 1958, 32.6 p.c. of the babies born were fourth or later children born to the family, 18.2 p.c. were third-born, 23.8 p.c. were second-born and only 25.4 p.c. were first-born.

The second-generation effect of the depression years is now being reflected in a comparatively low proportion of Canadian-born people reaching marriageable age. The result was a drop in the marriage rate in 1958 to 7.7 per thousand population, the lowest in twenty years, and an anticipated rate of 7.3 for 1959. The actual number of marriages dropped from 133,186 in 1957 to 131,525 in 1958.

From 1921 to the depression period, Canada's marriage rate was relatively steady but then sank to a low of 5.9 in 1932 after which there was a gradual rise. The early war years brought about a concentration of marriages which 'borrowed' both from the past and the future, in that they included marriages postponed during the depressed 1930's and subsequently made possible by wartime prosperity and marriages precipitated by impending departure overseas.

While world health has improved notably during the twentieth century, Canada has been in the vanguard of industrial nations. Shortly before 1900, health research entered the so-called bacteriological era when the primary concerns were the identification and classification of communicable diseases, their modes of transmission and control methods. Within a lifetime, the communicable diseases have been virtually eliminated as leading causes of death. The major causes today are degenerative conditions and accidents, and, with each successive decade, a smaller number of leading causes account for an increasing proportion of all deaths.

In 1958 these leading causes had a widely varying impact on the different stages of the life span but of outstanding importance were congenital conditions in infancy, violence in youth, and circulatory disorders among older persons. Accidents rank as the leading cause of death for both males and females in the age group 5-19 years and for males in the age group 20-44 years. Although tuberculosis is now far from being a leading cause of death for the population as a whole, it is the fourth leading cause of death for the age group 20-44. Cancer is the leading cause of death for females between

20-44 while in all groups, except that of 0-4 years, it is the second or third major cause of death. In the age groups above 44 years, cardiovascular disease is always the leading cause of death and the rate has increased from 278 per 100,000 population between 1926-30 to more than 395 in 1958.

Declining mortality has drastically altered many conditions of living. At the beginning of the century about 20 p.c. of the new-born died before reaching school age; this has been reduced to about 3 p.c. At the present low rates of mortality, appreciably less than 1 p.c. of the children entering school will die before entering the labour force. Only 10 p.c. of the males entering marriage will die during their period of greatest family responsibility, that is, before the marriage of their youngest child. More than two-thirds of those entering the labour force will reach age 65 and three-fifths of those retiring will live ten years longer. The greater likelihood of survival to the middle and older ages has increased the average length of married life and markedly reduced the chances of orphanhood for children. However, because mortality reductions have been the more rapid for women, there has been an increase in the chances that a wife will outlive her husband and the expected period of widowhood has also lengthened.

Births, Marriages and Deaths, 1926-59

(Newfoundland included from 1949)

Year	Births		Marriages		Deaths		Natural Increase	
	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹
Av. 1926-30.....	236,712	24.1	71,924	7.3	109,164	11.1	127,548	13.0
Av. 1931-35.....	228,591	21.5	68,660	6.5	103,800	9.8	124,791	11.7
Av. 1936-40.....	229,064	20.5	96,931	8.7	109,764	9.8	119,300	10.7
Av. 1941-45.....	277,320	23.5	114,091	9.7	115,572	9.8	161,748	13.7
Av. 1946-50.....	355,748	27.4	126,898	9.8	120,438	9.3	235,310	18.1
Av. 1951-55.....	416,334	28.0	128,915	8.7	126,666	8.5	289,668	19.5
1955.....	442,937	28.2	128,029	8.2	128,476	8.2	314,461	20.0
1956.....	450,739	28.0	132,713	8.3	131,961	8.2	318,778	19.8
1957.....	469,093	28.3	133,186	8.0	136,579	8.2	332,514	20.1
1958.....	470,118	27.6	131,525	7.7	135,201	7.9	334,917	19.7
1959 (estimate)....	486,000	27.9	127,000	7.3	141,000	8.1	345,000	19.8

¹Per thousand population.

A polling station located in a Winnipeg school on civic election day gives fourth-graders their first lesson in municipal government.



Citizenship

The Canadian people have only since the close of the Second World War possessed the recognized legal status of 'Canadian', although Canadian 'nationhood', implying the right of nationality, came into being with the Confederation of four British American provinces under the name of Canada on July 1, 1867. Prior to 1947, the older as well as the newer Canadians merely shared with citizens of other parts of the British Commonwealth the common status of 'British subject'.

The passage of the Canadian Citizenship Act in 1946 (effective Jan. 1, 1947) was motivated by the desire of the Canadian Parliament to provide a precise definition of 'Canadian citizen'. The Act was based on three main principles: the definition of Canadian citizens, whether natural-born or naturalized; the provision that, while the basic national status was to be 'Canadian citizen', all Canadian citizens were British subjects; and the "common status" provision that all persons who were British subjects under the laws of any other Commonwealth country were recognized by Canada as British subjects. After the passing of an amendment in 1950 making the terms "British subject" and "Commonwealth citizen" interchangeable for administrative and psychological reasons, there were in Canada three classes of citizens: Canadian citizens, citizens of other Commonwealth countries, and aliens who might apply for and be granted certificates of citizenship.

Natural-born Canadian citizens are those born in Canada or on a Canadian ship, or born outside Canada with a Canadian father, if birth is registered within two years. Immediately upon the implementation of the Citizenship Act, persons who had already been naturalized and British subjects who had been resident in Canada for at least five years became Canadian citizens. British subjects fulfilling residence qualifications after 1947 are required to apply for certificates of Canadian citizenship.

For the citizen of another country, the first step to Canadian citizenship following his legal admission to Canada as a 'landed' immigrant, is to file a Declaration of Intention with the clerk of the court in the district in which he resides. This is followed by a final application placed three months in advance of the completion of his five years of residence. Upon the lapse of the three-month waiting period (allowed for the filing of any objection), the applicant is called before the court for examination by a judge as to whether he has fulfilled the requirements of the Act respecting his legal entry, age, residence, good character, reasonable knowledge of English or French, and understanding of the responsibilities and privileges of Canadian citizenship. The decision of the judge is forwarded to the Department of Citizenship and Immigration where a certificate may be granted at the discretion of the Minister. The applicant's Oath of Allegiance is given before an open court and he receives his certificate of citizenship in an impressive legal ceremony.

In 1959, Canadian citizenship certificates were granted to 71,280 persons who formerly owed allegiance to other countries, some 16 p.c. fewer than the 84,183 persons granted certificates in 1958.

Almost 19 p.c. of these new Canadians had formerly been citizens of Germany; 16 p.c. of Italy; almost 15 p.c. of the Netherlands; over 13 p.c. of British Commonwealth countries. The remainder had come from Poland, Russia, Estonia, Latvia, Lithuania, China and Austria, with a few from other countries.

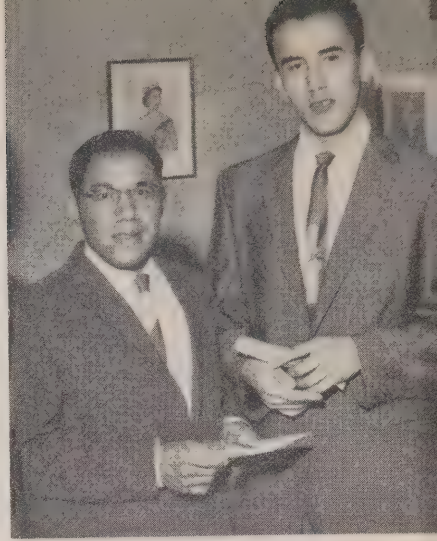
The Native Peoples of Canada

Two small segments of the population are given special attention because they, in point of time and origin, are the most truly Canadian of the country's citizens and because they, of all the people in the land, are the least able to cope with the changing way of life being quickly forced upon them. The Indians and Eskimos are two different races, living for the most part in separate latitudes. In only four centres—Aklavik and Inuvik near the mouth of the Mackenzie River, Fort Chimo on the southern point of Ungava Bay, and Great Whale River on the east side of Hudson Bay—do they share the same community. The treeline is generally the southern boundary for the Eskimo and the northern limit for the Indian.

Indians. At the present time there are nearly 180,000 Indians in Canada, grouped into about 600 "bands" and living for the most part on 2,226 tracts of land that have been reserved for their use. These reserves, having a total area of 5,900,000 acres, are scattered across the country from Prince Edward Island in the east to the Queen Charlotte Islands in the west and from southern Ontario north to Aklavik in the Western Arctic. It is believed that, when the white man arrived on this continent, there were about 200,000 Indians roaming what is now Canada but half a century ago they had dwindled to fewer than 90,000 and were considered a dying race. Since then, however, health services have drastically reduced infant mortality among them and prolonged life in middle age, so that they are now perhaps the fastest-growing ethnic group in the country.

The Indians of Canada today form one of the most varied populations on earth. Those living close to non-Indian communities very often follow the same type of existence as their neighbours—farming, working in factories, in offices, or at individual trades—and some are lawyers, doctors, nurses or teachers. At the other end of the scale are the Indians who have remained in isolated areas and continue to follow a food-gathering type of life not too different from that of their ancestors. In between are a variety of levels of existence, each with its own set of problems. Many Indians both live and work off the reserves and some have become very proficient in certain occupations such as high-steel construction, mining, fishing, boat-building and woods operations, and many live on the reserve but work outside on seasonal projects. But whatever his mode of life or wherever he lives, the Indian is presently caught between two worlds, one representing the old Indian culture with its own thought patterns and attitudes which are quite different from those of the non-Indian, and the other the fast-paced, technological society of the mid-twentieth century.

The Indian Affairs Branch of the Department of Citizenship and Immigration, which is responsible for the administration of all matters affecting the welfare of Indians, has set two essential objectives for the next decade—a greater measure of self-responsibility for the people on the reserves, and



Two Manitoba Indians who have been awarded art and music scholarships by the Federal Government.

more help for those who wish to make their livelihood in non-Indian society. But the pace of development must be determined by the Indians themselves and not forced upon them. It is the young people who will decide the future and it is through its educational policy that the Indian Affairs Branch hopes to give the greatest assistance, a policy designed to give every child the best schooling he can absorb. Day and residential schools are provided but emphasis has been placed recently on the teaching of Indian children in non-Indian schools so that they may be placed educationally on the same level as other Canadian children and, through association, find integration easier in later years. In the 1958-59 academic year, of the 38,836 Indian children attending school, 8,186 were in non-Indian schools—7,717 in elementary and high school grades, 26 in university and 443 in teacher, nurse or other training courses.

At the end of formal schooling, the Indian must make his own decision either to stay on the reserve or to earn a living in a wider Canadian society. If he chooses reserve life he may receive financial help in establishing himself in farming, fishing or business. If he chooses life away from the reserve, a job placement and counselling service is at his disposal.



Members of the Indian Association of Alberta with their legal counsel, draft a brief for the Senate-Commons Committee on Indian Affairs. Much of the leadership among the Indians today stems from the band councils, mostly elected but sometimes still chosen according to tribal custom. These councils may make by-laws on various matters of a local nature and exercise a control over the expenditure and management of their funds and property. Through the growing activities of certain councils, there is evidence that the Indian is desirous of taking a greater part in the conduct of his own affairs.



Eskimos. Canada's Eskimo population of about 11,500 is very thinly dispersed across the sprawling top of the continent. The main groups live along the northern coast of the Western Arctic, on Baffin Island and in northern Quebec, most of them following their traditional semi-nomadic existence tied to the seasonal pursuits of hunting, trapping and fishing. Today, however, the Eskimos and the vast forbidding land in which they live have begun to emerge as a fresh force in national development. The great regions of the northern mainland and the Arctic islands are being actively appraised for their resource potential; meteorological and communications stations dot the whole area; aircraft, ships, trucks, heavy machinery, buildings and imported food are becoming part of the North, drawing the Eskimos into a completely new life and bringing them into contact with new occupations.

The Canadian Government, through the Department of Northern Affairs and National Resources and other agencies, has embarked on a program to discharge its moral responsibilities to see the Eskimos through this period of transition. With other Canadians they share family allowances, old age security and assistance, and the blind, the disabled and the needy are provided for, but the objective envisaged for them is a high standard of health, good educational facilities and a full and valuable place in the development of the country to which they belong.

The achievement of this goal calls for the co-operation of all who share the high altitudes with them—northern service officers, teachers, doctors, nurses, missionaries, traders, radio operators and weather men. Radio and air patrols maintain administrative contact and experimental emergency units are being set up in certain areas, stocked with food and medical supplies in case of need. Eskimos following their traditional way of life are being given new ideas to strengthen their security without interfering with their self-reliance. They are being taught the value of conservation of game and the advantages of co-operative effort in harvesting and sharing food supplies and also in processing and marketing. Eskimos who choose to enter wage-employment, now becoming available to those who are prepared for it, are given training, sometimes on the job, sometimes in northern schools and sometimes outside the North. Vocational or trades training is regarded as so vital to the earning power of the northern people that it is included in the school curriculum. There are now about 50 schools in the Northwest Territories which all northerners attend. They range from schools in the larger centres offering a wide range of courses where students may qualify for university entrance to single classroom units in remote Eskimo communities.

The Eskimos are a good-natured, resourceful people, skilful with their hands and very adaptable to ideas and occupations very different from those followed by tradition. They have a definite sense of the artistic and have been encouraged to make use of this talent. Their stone carvings and seal-skin prints have advanced into the front ranks of the world's primitive art and have become an important source of revenue for their creators. Also, given some help from vocational education supervisors, the Eskimos are able to use their native skills in other ways to produce revenue, such as the tailoring of fur garments in which some of them have become very proficient.

Some Eskimos are no longer dependent upon the precarious supply of caribou for food, clothing and summer shelter. Eskimos make up more than half the labour force in the nickel mine at Rankin Inlet; more than 100 are employed in Frobisher Bay and another 90 in jobs across the DEW line. This family lives at Povungnituk on the east coast of the Hudson Bay.



Eskimo artists bring their internationally famous soapstone and walrus tusk carvings to the trading post to be priced before they are sent "outside" for sale.

In May 1959, the voice of the Eskimo was heard speaking on his own behalf outside the Arctic for the first time. The Eskimo Affairs Committee, which normally reports to its chairman, the Commissioner of the Northwest Territories, was invited to sit around the conference table at Ottawa with senior officials of government, religion and industry to examine with them the changes taking place in the Arctic way of life and the roll of the Eskimo people in that change. The exchange of views is of mutual advantage. What the Eskimo wishes for himself—that he be equipped to choose the kind of life he wishes to live, where and how he wishes to live it—is also the desire of his government and his fellow Canadians.

The Government

THE Canadian form of government has evolved, over the centuries, to meet the needs and wishes of the Canadian people. In their earliest years, the Canadian colonies had no representative institutions. During the rule of France, Quebec was governed by an appointed council composed of the governor, the intendant, the bishop and others. The British colonies were administered by an English governor, who appointed his own council, or, as in Newfoundland for many years, by a governor without even a council. But the British settlers brought with them a tradition of self-government which they speedily introduced to their new homeland. Halifax, the first permanent English settlement, was founded in 1749, and Nova Scotia elected its first legislative assembly in 1758. By 1791, Prince Edward Island, New Brunswick and Upper and Lower Canada (Ontario and Quebec) all had their own legislatures.

Today Canada is a democracy, administered by governments that are representative and responsible. It is a federation of provinces and territories, with clearly defined jurisdictions as between federal and local authorities. It is a monarchy and it is a sovereign state. At the same time, it is a member nation of the Commonwealth of Nations.

The Canadian experiment in nation-building began on July 1, 1867, with the federal union of the three provinces of Canada (Ontario and Quebec), Nova Scotia and New Brunswick under the name of "Canada". Within four years, upon the acquisition of the vast interior of Rupert's Land and the Northwestern Territory (1870) and the admission of the Pacific Coast province of British Columbia (1871), the new Dominion, in an unparalleled westward expansion, was extended to the Pacific. Although the province of Prince Edward Island entered Confederation two years later, followed by the spacious Canadian off-shore Arctic Archipelago in 1880, it remained for Britain's oldest colony of Newfoundland to round out the nation's territorial growth through union with Canada as a province as late as Mar. 31, 1949.

That the experiment was a bold one is evident in the formidable geographical, cultural and economic obstacles that faced the Fathers of Confederation some ninety years ago. Nothing but a broad federal union possessing a powerful central government would ensure the survival of the scattered and isolated colonies from the dangers of economic collapse and political absorption by the United States. Nothing but an expanding Canada could hope to hold the West as a new frontier of settlement and provide the



Canada's Parliament Buildings fronts the shoreline of the city



te the magnificence of "The Hill", towering above the Ottawa River. In the background a huge paper mill

nation with a new strategic staple of trade. Nothing but a broad territorial union could sponsor extensive railway construction essential to the linking of the Maritimes with the St. Lawrence Lowlands, to overcoming the barriers of the Canadian Shield and the Western Cordillera, to the settlement and exploitation of the vacant western plains, or to the realization of the vision of a vast internal free-trade area and a strong and diversified economy.

Only a federal union, with a generous measure of provincial autonomy, would end the political deadlock inherent in the cultural dualism of the peoples of Upper and Lower Canada. Only such a federal system of democratic government gave promise of harmonizing the two streams of English and French culture, of enabling autonomous provinces severally to enact legislation befitting their peculiar regional circumstances, and of facilitating among differing elements the growth of a common Canadian national sentiment.

Only federal union would meet the demands of sectionalism, of diversely endowed regions, and of vast distances; permit the logical division of legislative powers whereby the central government would be competent to deal with all matters of national concern and the provincial governments with all those of local concern; and would leave unimpaired the practice of the unwritten conventions of responsible government recently won by the colonial legislatures—the responsibility of prime minister and cabinet to the legislature and the invaluable integration of legislative and executive functions

Such were the visions, concepts and ambitions of the Fathers of Confederation as they drafted at Quebec in 1864 the Seventy-Two Resolutions out of which the British North America Act was largely fashioned. That Act, which emerged from Westminster on Mar. 29, 1867, and became effective July 1, 1867, provided the new Canadian federation with a powerful central government as essential to its defence, to the development of its resources and to the extension of its authority to the far western and northern territories. The impressive array of specific powers falling within the exclusive legislative authority of the Parliament of Canada included control of the Armed Forces, the regulation of trade and commerce, banking, credit, currency and bankruptcy, criminal law, postal services, the fisheries, patents and copyrights, the census and statistics, the raising of money by any mode of taxation and, in the field of communication, such matters as navigation and shipping, railways, canals and telegraphs. In addition, the Federal Government was endowed with a residual authority in matters beyond those specifically assigned to the provincial legislatures and including the power to make laws for the peace, order and good government of Canada.

The provinces, on the other hand, were granted powers embracing mainly such matters of local or private concern as property and civil rights, civil law, provincial company charters, municipal government, hospitals and asylums, licences, the management and sale of public lands, and direct taxation within the province for provincial purposes. Legislation concerning immigration and agriculture could be enacted by both the Parliament of Canada and the provincial legislatures with the federal law having over-riding authority in the event of conflict.

In view of the cultural dualism of the new Dominion, the provincial legislatures were given exclusive authority in relation to education, subject to federal intervention in questions involving legal rights in denominational schools. For a like reason, the use of the English and the French languages was safeguarded, it being specifically provided that either language may be used in the debates of the Parliament of Canada and of the Legislature of

Her Majesty Queen Elizabeth II and The Prince Philip being welcomed by Prime Minister the Rt. Hon. John Diefenbaker and Mrs. Diefenbaker at the beginning of their trans-Canada tour in the summer of 1959.





His Excellency the Governor General George P. Vanier reading the speech from the throne in the Senate Chamber on Jan. 14, 1960, thus opening the new parliamentary session.

Quebec and in any court of Canada; and that both languages shall be used in the respective records and journals and in the published Acts of the Parliament of Canada and of the Legislature of Quebec.

The Parliament of Canada

Next to the distribution of legislative jurisdiction between the central and provincial governments, the most significant feature of the Canadian constitution is its unwritten parliamentary system "similar in principle to that of the United Kingdom".

That the Canadian constitution is founded on the British parliamentary system is evident in the fact that Parliament embraces the Queen, the Senate and the House of Commons; that the executive and legislative powers are in close identification through the control of administration by leaders of the parliamentary majority; and that the judiciary is virtually independent of control by either the executive or legislative branches of government. The Crown is the unifying symbol of all three spheres of power.

The Queen. Although Her Majesty Queen Elizabeth II is Queen of Canada, her personal participation in the functions of the Crown for Canada is necessarily reserved to such occasions as a royal visit or the periodic appointment of a personal representative on the advice of her Canadian Ministers. The presence of Her Majesty at the opening of Canada's Twenty-Third Parliament in October 1957, and at the celebration of the opening of the St. Lawrence

Seaway in June 1959 were occasions of unprecedented significance for Canadians. In delivering the Speech from the Throne, the Queen became the first Sovereign to inaugurate in person a session of Parliament as Head of State of Canada, acting on the direct advice of her Canadian Ministers.

The title of the Queen, so far as Canada is concerned, is "Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her Other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith". Sovereigns of Canada since Confederation in 1867 are as follows:—

<u>Sovereign</u>	<u>Dynasty</u>	<u>Year of Birth</u>	<u>Date of Accession</u>
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha...	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

The personal representative of the Queen in Canada is the Governor General, appointed by Her Majesty entirely on the advice of the Prime Minister of Canada and usually for a term of five years. He exercises such formal authority as summoning, proroguing and dissolving Parliament and assenting to Bills in the Queen's name. The present Governor General of Canada, the Right Honourable Georges Philias Vanier, D.S.O., M.C. and Bar, is the second Canadian to hold this high office. Appointed on Aug. 1, he assumed office on Sept. 15, 1959.

The active Canadian executive authority for controlling the exercise of the powers of the Crown resides in the Cabinet or Ministry.

The House of Commons. A new House of Commons is elected at least once every five years under an adult franchise conferred upon Canadian citizens or British subjects, male and female, who have been resident in Canada for twelve months prior to polling day. Representation by provinces and territories is now as follows:—

Newfoundland.....	7	Alberta.....	17
Prince Edward Island.....	4	British Columbia.....	22
Nova Scotia.....	12	Yukon Territory.....	1
New Brunswick.....	10	Mackenzie District, Northwest Territories.....	1
Quebec.....	75		
Ontario.....	85		
Manitoba.....	14		
Saskatchewan.....	17	TOTAL.....	265

Party standing, as of Jan. 1, 1960 was as follows: Progressive Conservatives, 208; Liberals, 48; Co-operative Commonwealth Federation, 8; Liberal-Labour, 1.

Constitutional convention under the parliamentary system of representation requires that the leader of the national party that has won the largest number of seats in a newly elected House of Commons shall be asked by the Queen's personal representative to form the Government. The Ministry—responsible for determining all important policies of government and securing the passage of such legislation, financial measures and administrative provisions as their supporters may approve—is chosen by the Prime Minister to be representative, as far as possible, of the several regions of the country and its principal cultural, religious and social interests.

The members of the Ministry, as at Apr. 1, 1960, and their respective portfolios are listed below according to precedence.

Rt. Hon. John George Diefenbaker.....	Prime Minister
Hon. Howard Charles Green.....	Secretary of State for External Affairs
Hon. Donald Methuen Fleming.....	Minister of Finance and Receiver General
Hon. Alfred Johnson Brooks.....	Minister of Veterans Affairs
Hon. George Hees.....	Minister of Transport
Hon. Leon Balcer.....	Solicitor General
Hon. George Randolph Pearkes.....	Minister of National Defence
Hon. Gordon Churchill.....	Minister of Trade and Commerce
Hon. Edmund Davie Fulton.....	Minister of Justice and Attorney General
Hon. George Clyde Nowlan.....	Minister of National Revenue
Hon. Douglas Scott Harkness.....	Minister of Agriculture
Hon. Ellen Louks Fairclough.....	Minister of Citizenship and Immigration
Hon. J. Angus MacLean.....	Minister of Fisheries
Hon. Michael Starr.....	Minister of Labour
Hon. William McLean Hamilton.....	Postmaster General
Hon. William J. Browne.....	Minister without Portfolio
Hon. Paul Comtois.....	Minister of Mines and Technical Surveys
Hon. Jay Waldo Monteith.....	Minister of National Health and Welfare
Hon. Francis Alvin George Hamilton....	Minister of Northern Affairs and National Resources
Hon. Raymond O'Hurley.....	Minister of Defence Production
Hon. David James Walker.....	Minister of Public Works
Hon. Joseph Pierre Albert Sévigny.....	Associate Minister of National Defence

The Senate. The Senate or Upper House of the Parliament of Canada shares with the House of Commons the responsibility for the enactment of all federal legislation in that Bills must pass both Houses before receiving Royal Assent through the Governor General. Yet the influence of the Senate on legislation is immeasurably less than that of the Commons in which most public Bills are introduced by the Ministry and to which the latter is responsible. The most striking evidence of this fact is that any Bill for the expenditure of any public money or the imposition of any tax must originate in the elected House, by custom, through the Cabinet. None the less, the Senate has the power to perform a valuable service to the nation in amending and delaying the passage of measures that might result from sudden shifts in public opinion or party strength.

Canadian Senators are summoned for life by the Governor General, on the nomination of the Prime Minister, with equality of representation for regional divisions (except in the Atlantic Provinces after the entry of Newfoundland in 1949 with six Senators). The representation in the Senate by regions and provinces is as follows:—

Ontario.....	24	Western Provinces.....	24
Quebec.....	24	Manitoba.....	6
Atlantic Provinces.....	30	British Columbia.....	6
Nova Scotia.....	10	Alberta.....	6
New Brunswick.....	10	Saskatchewan.....	6
Prince Edward Island.....	4		
Newfoundland.....	6		
		TOTAL.....	102

The Yukon Territory and the Northwest Territories at present lack representation in the Senate.

Party standing, as of Jan. 1, 1960 was as follows: Progressive Conservatives, 20; Liberals, 73; Independents, 2; Independent Liberals, 1; Nil (Senator Gladstone), 1; Vacancies, 5.

The first and only Treaty Indian to be appointed to the Senate is the Hon. James Gladstone, a member of the Blood Tribe in the Blackfoot Nation. As a Treaty Indian, he was not entitled at the time of his appointment in Jan., 1958 to vote in general elections, but legislation passed in 1960 now extends the franchise to all Indians.

While the Ministers of the Crown carry the political responsibilities of their respective departments, the Federal Civil Service forms the staffs of the twenty departments and of various boards, commissions, bureaus and other agencies of the Government. The day-to-day administration of a department is handled by a permanent head, usually known as Deputy Minister. The majority of the civil servants are recruited, classified and promoted by the Civil Service Commission of Canada.

Provincial and Territorial Government

The Provinces. Similar political institutions and constitutional usages operate in the government of the ten provinces as in that of the nation as a whole. In each province the Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council, usually for a term of five years. The powers of the Lieutenant-Governor in the provincial sphere are essentially the same as those of the Governor General in the federal sphere.

The Legislature of each of the provinces comprises, in addition to the Lieutenant-Governor, a Legislative Assembly elected for a term of five years and, for Quebec only, a Legislative Council of 24 members appointed for life by the Lieutenant-Governor in Council. The franchise in provincial elections is granted, generally speaking, to every adult 21 years of age or over, although in Saskatchewan, Alberta and British Columbia the age is 18, 19 and 19, respectively. The conventions of cabinet government operate in the Legislative Assembly of each of the provinces as in the House of Commons at Ottawa. Provincial premiers and administrations as at July 15, 1960, were as follows:—

Newfoundland.....	Hon. J. R. Smallwood.....	Liberal
Prince Edward Island.....	Hon. Walter R. Shaw.....	Conservative
Nova Scotia.....	Hon. R. L. Stanfield.....	Progressive Conservative
New Brunswick.....	Hon. Louis B. Robichaud.....	Liberal
Quebec.....	Hon. Jean Lesage.....	Liberal
Ontario.....	Hon. Leslie M. Frost.....	Progressive Conservative
Manitoba.....	Hon. Dufferin Roblin.....	Progressive Conservative
Saskatchewan.....	Hon. T. C. Douglas.....	Co-operative Commonwealth Federation
Alberta.....	Hon. Ernest C. Manning.....	Social Credit
British Columbia.....	Hon. W. A. C. Bennett.....	Social Credit



The Lieutenant-Governor in each province is appointed by the Federal Cabinet, usually for a term of five years. Manitoba's Lieutenant-Governor the Hon. Errick F. Willis and Mrs. Willis are being congratulated by the former incumbents the Hon. John S. and Mrs. McDiarmid.

The Territories. The vast and sparsely populated regions of northern Canada lying outside the ten provinces and comprising Yukon Territory and the Northwest Territories have attained both elected representation in the House of Commons and a measure of local self-government. The local government of Yukon Territory is composed of a chief executive, styled Commissioner, appointed by the Federal Government, and a locally elected Legislative

Council of five members, meeting at Whitehorse. The government of the Northwest Territories is vested in a Commissioner (who is the Deputy Minister of the Department of Northern Affairs and National Resources) assisted by a Council of nine members of whom four are elected by popular franchise in the Territories and five are appointed by the Federal Government from among federal officials. The Council meets annually in the Territories and at least once each year at Ottawa which is the seat of government. It is advised by the Eskimo Affairs Committee, a policy-making body to which, in 1959, for the first time, two Eskimos were added as members.



Members of the Eskimo Affairs Committee poring over the map of the north with the Rt. Hon. John Diefenbaker.

Local Government

As local government at the municipal level falls under the jurisdiction of the provinces, there are ten distinct systems of municipal government in Canada, as well as many variations within each system. The variations are attributable to differences in historical development and in area and population density of the 4,300 incorporated municipalities. Possessing the power exclusively to make laws respecting municipal institutions, the provincial legislature of each province has divided its territory into varying geographical areas known generally as municipalities and more particularly as counties,

The townspeople of Kitimat, the giant aluminum development in northwest British Columbia, chose government by town council.



cities, towns, villages, townships, rural municipalities, or municipal districts. Municipalities are incorporated by provincial legislation and have various powers and responsibilities suited to their classification. A municipality is governed by an elected council whose head may be called the mayor, reeve, warden or overseer, and the other citizens who are its members may be known as controllers, aldermen or councillors. The responsibilities of the municipalities are generally those most closely associated with the citizen's everyday life, his well-being and his protection.

The Judiciary

The Canadian judiciary interprets the law and administers justice. The provinces are authorized to administer justice in the territories under their jurisdiction, including the organization of civil and criminal courts and the establishment of procedure in civil matters in those courts. Legislation concerning criminal law and the procedure in criminal matters is under the jurisdiction of the Parliament of Canada.

The Supreme Court of Canada is the court of final appeal in Canada, and exercises general appellate jurisdiction throughout the nation in civil and criminal cases. The jurisdiction of the Exchequer Court extends to cases embracing claims made by or against the Crown in the right of Canada. The Chief Justice of Canada and the puisne judges of the Supreme and Exchequer Courts are appointed by the Governor General in Council.

Judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick, are appointed by the Governor General in Council and their salaries, allowances and pensions are fixed and paid by the Parliament of Canada.



The new Speaker of the Ontario House, named at the opening of the 26th Legislature on Jan. 26, 1960, wears his robes for the first time as he stands on the dais behind the Clerk of the House. Solemn-faced pages flank him during the ceremony, and seated in the front row on his left are justices of the high courts.

Government Finance

The division of the responsibility of government in Canada between the federal and provincial authorities, and the delegation by the latter of some of their powers to local or municipal authorities, creates a division of financial responsibility and a need for such apportionment of revenues and borrowing power as will enable responsibilities to be met. As just and satisfactory a settlement of these ever-present problems as can be achieved is essential for Canada, and much of the history of government finance is the story of periodic attempts to adjust to this need.

Although the British North America Act outlined the relationship between federal and provincial jurisdictions, and the provincial legislatures have, in numerous Acts, set forth those between the provincial and local, these Acts serve only as legal guides. In practice, there has been a succession of financial arrangements, the aim of which has been to establish a practical division of revenues and responsibilities. As these have, of necessity, been negotiated compromises between the federal and provincial levels and largely unilateral decisions of the provinces as between province and municipality, they have never satisfied all concerned, and probably never will, due to differing viewpoints and changing requirements.

At the time of Confederation it was agreed that the provinces should be paid certain subsidies in lieu of revenues which they surrendered to the central government, and like payments were extended to each new province admitted. In addition, the Federal Government assumed certain provincial debts and undertook to carry out specified works, such as connecting railways. The intention was that such financial arrangements should be final, but claims for re-adjustments came periodically, and many were met in whole or in part.

Until the First World War the federal and provincial governments' revenues were largely obtained from mutually exclusive tax sources, but the exigencies of wartime financing forced the federal government to enter tax fields used largely or exclusively, until then, by the provinces—the British North America Act having allowed Parliament the power of “the raising of money by any mode or system of taxation”. From that time the overlap of taxation continued to grow.

The provinces having fallen, during the depression, into even greater financial difficulties than the federal authority, a Royal Commission on Dominion-Provincial Relations was established which, in 1940, published what has become known as the Rowell-Sirois Report. It made recommendations of some import for the re-allocation of tax fields. However, the financing of the Second World War soon pushed other considerations into the background and the Federal Government was forced into additional provincial tax fields, as well as into increasing its use of those which it had previously entered. Agreement was soon sought and obtained by the Federal Government whereby the provinces would forego the levying of personal income and corporation taxes for the duration of the war and accept “rental” payments in lieu thereof. This action sustained provincial revenues and enabled the federal authority to expand its revenues greatly to help finance the war.

The wartime agreements established a pattern which has since influenced negotiations and settlements. At later conferences the provinces were offered rental payments in lieu of levying their own taxes on corporations and on personal income and successions. Most provinces agreed to the terms. However, Quebec has not signed a rental agreement since 1942. Rather, in 1947 it began levying corporation taxes and succession duties and in 1954 it entered the personal income tax field. Ontario from 1947 to 1952 rented only the personal income tax, levying corporation taxes later.

The latest federal-provincial tax arrangements to emerge from the conference rooms depart considerably from the 1942, 1947 and 1952 agreements. The Federal-Provincial Tax-Sharing Arrangements Act, 1956 attempted to put every province in a "neutral" position in which the decision to impose its own taxes could be made with no material financial penalty for not signing a rental agreement. All provinces are to obtain revenue yields from "standard rates of taxes" (viz. 10 p.c. of the federal tax on personal income, 9 p.c. of taxable corporate income and 50 p.c. of federal succession duties) equal to the average of the two highest per capita provincial yields. A stabilization clause assures the provinces of as much revenue as they would have received had the former agreements continued. All provinces except Quebec and Ontario agreed to rent the fields of personal and corporation income taxes, other corporation taxes and succession duties to the Federal Government for the 1957 to 1962 period. Ontario agreed to rent only the personal income tax field. Quebec, which did not sign a rental agreement, receives substantial amounts from the Federal Government under the tax equalization clause. The arrangements were amended in 1958 to increase the provincial share of the federal tax on personal income from 10 to 13 p.c. Provision was also made in 1958 for adjustment grants to the Atlantic Provinces amounting to \$25,000,000 for each of four years and divided as follows: to Nova Scotia, New Brunswick and Newfoundland, each \$7,500,000 and to Prince Edward Island, \$2,500,000.

In addition to the above "unconditional" payments which may be spent by the provinces as they see fit, there are many "conditional" grants from the Government of Canada which are contingent upon the provinces providing certain services at specified standards. The major recent development in this field was the commencement in 1958 of the sharing of costs of hospital insurance programs under the Hospital Insurance and Diagnostic Services Act. General Health Grants, Trans-Canada Highway Grants and various other shared-cost contributions have been paid for many years. However, federal grants-in-aid and shared-cost contributions are growing at a rapid rate; between 1954 and 1958 they tripled.

A similar development has occurred in the provincial-municipal relationship. Provincial grants-in-aid and shared-cost contributions now provide a significant portion of total gross municipal revenue. Some provincial governments are now paying nearly half the cost of operation of local schools by way of substantial grants-in-aid. They also contribute toward local roads

and health and welfare services. Some provinces also provide "unconditional" grants to their municipalities to be spent as they see fit.

Finances of the Federal Government

The Government of Canada levies direct and indirect taxes, of which the income tax, individual and corporation, yields the largest return. Excise taxes (including a general sales tax), excise duties and customs duties also produce a very substantial sum. Succession duties and some other taxes yield relatively minor amounts, and certain non-tax revenues, special receipts and credits accrue each year from financial transactions outside the tax fields. A 3-p.c. sales tax, a 3-p.c. individual income tax with a maximum of \$90, and a 3-p.c. corporation income tax are levied in addition to the regular taxes from these sources as contributions to the Old Age Security Fund, from which pensions are paid to persons over seventy years of age.

The income tax has been the chief source of revenue of the Federal Government since before World War II. Rates of tax on individual incomes were increased considerably and other forms of income tax were introduced to help finance the War but after hostilities ceased a succession of reductions in rates and increases in exemption allowances relieved some of the burden for the taxpayer. Taxes on corporation incomes were also reduced and the excess profits tax was abolished. However, the expansion of personal income, the growth of the labour force and the growth of industry generally in the postwar years have offset the effect of the reduction in rates and the revenue from income taxes continues to grow each year.

For personal income tax purposes, the present (1960) exemptions from income in respect of marital status and dependants are: \$1,000 basic exemption with additional exemptions of \$1,000 for persons taxed as married and \$500 for persons 65 years of age or over; maximum exemptions for dependants of \$250 each are allowed, or \$500 if the dependant is not eligible for family allowance. The rates for 1960 range from 14 p.c. on the first \$1,000 of taxable income to 80 p.c. on income in excess of \$400,000, including the Old Age Security Tax of 3 p.c. up to \$90.

The Estate Tax Act passed in 1958 provides for a minimum deduction of \$40,000 in all estates and an additional deduction of \$20,000 where the deceased's wife survives and \$10,000 for each child under 21, or over 21 if wholly dependent upon the deceased or his wife because of infirmity. The \$10,000 deduction for such a child is increased to \$15,000 if the deceased's husband or wife did not survive him. These deductions are allowed regardless of whether or not the wife or child receive any benefit.

By far the largest item of expenditure of the Government of Canada is defence services. Other expenditures of major significance are made for health and social welfare, veterans pensions and other benefits, transportation and natural resources. Payment of debt charges and tax agreement payments to the provinces are also major items. The outlay for defence, health and welfare, veterans benefits, debt charges and payments to provinces has, during and since the War, caused much of the great growth in federal expenditure.

**Revenue and Expenditure of the Federal Government,
Year Ended Mar. 31, 1959**

Source	Revenue	Function	Expenditure
	\$'000		\$'000
Taxes—			
Income—		Defence services.....	1,594,563
Corporations.....	1,075,878	Mutual aid.....	70,711
Individuals.....	1,499,849	Veterans' pensions and other	
Interest, dividends, and other		benefits.....	295,388
income going abroad.....	61,213	General government.....	261,982
General sales.....	868,114	Protection of persons and pro-	
Excise duties and special excise		perty.....	72,575
taxes—		Transportation and communica-	
Alcoholic beverages.....	179,264	tions.....	329,324
Tobacco.....	288,581	Health.....	129,695
Automobiles.....	59,308	Social welfare.....	1,201,762
Other commodities and ser-		Recreational and cultural ser-	
vices.....	29,735	vices.....	22,110
Customs import duties.....	486,508	Education.....	64,866
Succession duties.....	72,535	Natural resources and primary	
Other.....	1,213	industries.....	263,309
Total Taxes.....	4,622,198	Trade and industrial develop-	
		ment.....	10,103
		National Capital area planning	
		and development.....	9,561
		Debt charges (excluding debt	
		retirement).....	545,721
		Payments to government enter-	
		prises.....	169,741
Privileges, licences and permits..	29,449	Payments to provincial and	
Sales and services.....	56,910	municipal governments—	
Fines and penalties.....	1,216	Federal - provincial taxation	
Exchange fund profits.....	18,626	agreements.....	424,100
Receipts from government enter-		Other.....	65,884
prises.....	99,924	Other expenditure—	
Bullion and coinage.....	4,518	International co-operation	
Postal service.....	183,380	and assistance.....	62,523
Other revenue.....	11,683	Postal service.....	183,536
		Other.....	113,893
Non-revenue and surplus receipts.	37,620	Non-expense and surplus pay-	
		ments.....	291
Total Net General Revenue.	5,065,524	Total Net General Expendi-	
		ture.....	5,891,638



Finances of the Federal Government, Years Ended Mar. 31, 1868-1959

NOTE.—These figures are derived from the Public Accounts of Canada and differ from those in the preceding table. Revenue and expenditure in this table are on a gross basis and net debt here represents the excess of gross debt over net active assets.

Year	Total Budgetary Revenue	Per Capita Revenue ¹	Total Budgetary Expenditure	Per Capita Expendi- ture ¹	Net Debt at End of Year	Net Debt per Capita ²
	\$	\$	\$	\$	\$	\$
1868.....	13,687,928	3.95	13,716,422	3.96	75,757,137	21.58
1871.....	19,375,037	5.34	18,871,812	5.21	77,706,518	21.06
1881.....	29,635,298	6.96	32,579,489	7.66	155,395,780	35.93
1891.....	38,579,311	8.07	38,855,130	8.13	237,809,031	49.21
1901.....	52,516,333	9.91	55,502,530	10.47	268,480,004	49.99
1911.....	117,884,328	16.87	121,657,834	17.40	340,042,052	47.18
1921.....	436,888,930	51.06	528,899,290	61.82	2,340,878,984	266.37
1931.....	357,720,435	35.04	441,568,413	43.26	2,261,611,937	217.97
1941.....	872,169,645	76.63	1,249,601,446	109.80	3,648,691,449	317.08
1951.....	3,112,535,948	226.99	2,901,241,698	211.58	11,433,314,948	816.14
1952.....	3,980,908,652	284.17	3,732,875,250	266.46	11,185,281,546	773.59
1953.....	4,360,822,789	301.60	4,337,275,512	299.97	11,161,734,269	751.88
1954.....	4,396,319,583	296.15	4,350,522,378	293.06	11,115,937,064	727.15
1955.....	4,123,513,300	269.74	4,275,362,888	279.67	11,263,080,154	717.49
1956.....	4,400,046,639	280.29	4,433,127,636	282.40	11,280,368,964	701.47
1957.....	5,106,540,880	319.79	4,849,035,298	303.63	11,007,651,158	663.51
1958.....	5,048,788,279	304.36	5,087,411,011	306.65	11,046,273,890	647.94
1959.....	4,754,722,689	278.90	5,364,039,533	314.64	11,678,389,860	669.55

¹ Based on estimated population as at June 1 of the immediately preceding year

² Based on estimated population as at June 1 of same year

Revenue of the Government of Canada reached an all-time high in the year ended Mar. 31, 1957, of approximately \$5,107,000,000, and the highest expenditures were made in the year ended Mar. 31, 1959—viz. \$5,364,000,000. The net debt reached a peak of \$13,421,000,000 at Mar. 31, 1946.

Inflation in the general price level and population growth through the years have reduced the significance of the size of the Government of Canada debt, and the great expansion of the Canadian economy allows the country to support the present debt on a sound financial basis. On Mar. 31, 1939, the net debt amounted to 60.2 p.c. of the gross national product; by 1946 this had risen to 113.3 p.c. but by Mar. 31, 1959, the net debt amounted to approximately 36 p.c. of the gross national product.

The outstanding unmatured funded debt (including treasury bills) of the Government of Canada at Mar. 31, 1959, amounted to over \$15,574,000,000. The portion of the unmatured funded debt payable in Canada was 98.7 p.c., the portion payable in London amounted to 0.3 p.c. and in New York 1.0 p.c.

Adequate water supply and protection of water resources from pollution are major problems arising from rapidly increasing populations and industrial expansion. In southern Ontario particularly, municipalities have not been able to keep pace with requirements and to assist them a provincial Commission was set up in 1957 to plan, finance, build and operate sewage and water works for requesting communities. About 80 such projects had been undertaken by mid-1959. Shown is a medium-sized sewage plant built for the city of Stratford.

Provincial Finance

Net general revenue and net general expenditure of provincial governments amounted to over \$2,000,000,000 in 1957-58 or approximately \$122 per capita. Taxes and the new federal-provincial tax-sharing arrangements accounted for 65 p.c. of the total net general revenue. The largest expenditures of the provinces continued to be for transportation (chiefly roads), health, social welfare and education which together accounted for 74 p.c. of the total net general expenditure. In 1958 and 1959 the most significant development was the commencement of several provincial hospital insurance schemes. The federal-provincial tax-sharing arrangements were also revised somewhat in 1958 to increase the provincial share of federal tax revenue, and Atlantic Provinces Assistance Grants for four years were introduced.

Net General Revenue and Expenditure of Provincial Governments, Year Ended Mar. 31, 1958

Province	Revenue	Expenditure	Province or Territory	Revenue	Expenditure
	\$'000	\$'000		\$'000	\$'000
Nfld.....	39,479	47,878	Sask.....	135,965	124,353
P.E.I.....	9,441	10,766	Alta.....	246,013	199,420
N.S.....	64,480	74,474	B.C.....	281,796	287,465
N.B.....	61,616	63,486	Yukon.....	2,056	2,070
Que.....	515,384	493,374	N.W.T.....	1,269	1,605
Ont.....	594,480	656,481			
Man.....	73,594	75,615	Totals.....	2,025,573	2,036,987

Analysis of Net General Revenue and Expenditure of Provincial Governments, Year Ended Mar. 31, 1958

Source	Revenue	Function	Expenditure
	\$'000		\$'000
Taxes.....	954,994	General government.....	83,357
Federal - provincial tax - sharing arrangements.....	354,354	Protection of persons and pro- perty.....	108,158
Privileges, Licences and Permits—		Transportation and communi- cations.....	587,595
Motor vehicles.....	139,729	Health.....	302,033
Natural resources.....	278,010	Social welfare.....	168,081
Other.....	60,821	Recreation and cultural services.	18,034
Sales and services.....	28,435	Education.....	453,003
Fines and penalties.....	7,229	Natural resources and primary industries.....	146,890
Government of Canada—		Trade and industrial develop- ment.....	10,448
Share of income tax on power utilities.....	7,261	Local government planning and development.....	4,497
Subsidies.....	21,996	Debt charges (exclusive of debt retirement).....	54,844
Government enterprises.....	168,455	Contributions to local govern- ments.....	54,306
Other revenue.....	1,441	Contributions to government enterprises.....	10,050
Non-revenue and surplus receipts.	2,848	Other expenditures.....	26,697
Total.....	2,025,573	Non-expense and surplus pay- ments.....	8,994
SUMMARY OF LIQUOR CONTROL REVENUE		Total, exclusive of Debt Retirement.....	2,036,987
(included above)—			
Sales tax.....	2,285		
Permits.....	40,514		
Fines and confiscations.....	1,018		
Profits.....	164,544		
TOTAL.....	208,361		

Direct and indirect debt of provincial governments, less sinking funds, as at Mar. 31, 1958, amounted to over \$5,200,000,000, direct debt averaging out to \$163.23 per capita, and indirect debt to \$142.35 per capita. Total debt of the provinces has been increasing for a number of years, though the qualification mentioned as to the burden of federal debt—that it has become lighter because of inflation and increased population—has some application to provincial debt as well.

Municipal Finance

Incorporated municipalities include within their boundaries only a small portion of the area of Canada but they serve most of the population. Outside lie a few school districts and in parts of municipally unincorporated territory some local services are provided by the provincial government concerned. A great part of the area of Canada has not sufficient density of population to warrant even these limited activities. In most provinces, the municipalities levy the local taxation for school authorities but exercise little or no control over school administration or finance. In much of Quebec and Prince Edward Island and in limited areas of some other provinces, school authorities levy and collect local taxes. There is no municipal taxation for school purposes in Newfoundland, as schools are denominational and largely financed by the province.

The largest source of revenue for municipalities and other local authorities, yielding over two-thirds of the total, is the real property tax. Also varying in importance from province to province are business and other taxes, licences and permits, public utility contributions, and provincial grants and subsidies. Of municipal expenditure from current revenue almost a third goes to support local schools. Other major expenditures are for public welfare, roads and streets, protection of persons and property, and debt charges. Increasingly substantial sums of borrowed capital have been expended in recent years in an attempt to catch up and keep up with the streets, sanitation systems, water systems and other municipal services required by urban municipalities, whose population and development have increased at a rate far beyond that of the remainder of the country.

Municipal debt in most urban areas has increased at such a rate as to offset the inflationary and population growth factors which have held down the burden of federal and provincial debt, though this situation probably applies also in many rural municipalities. Provincial governments supervise the issuance of municipal debt, and limit it by legislation or by regulatory formulae. In some instances, provinces are now aiding municipalities and schools in their capital projects by various methods, such as by outright grants, loans, sharing of debt charges, and assumption of debt. The whole question of municipal finance and municipal-provincial education relationships is undergoing much thought and review.

For the calendar year 1957 gross current revenue and expenditure of all municipal governments in Canada approximated \$1,400,000,000. As at December 31, 1957, total direct debt of local government bodies and of activities which are carried on under their authority or by bodies which are co-existent with the municipalities, amounted to approximately \$3,500,000,000. There is very little indirect debt at the municipal level.

Canada's Natural Wealth

THE discovery and development of new natural resources since the beginning of the century is an epic story—a story of tremendous upsurge in the physical volume of production, aided by near-tripling of the population. Even so, Canada today contains a mere three-fifths of one per cent of the world's population, but produces more newsprint, nickel, asbestos and zinc than any other nation; is second in world output of hydro-electric power, pulp, uranium, platinum, aluminum, gold and oats, and third in the production of silver and sawn lumber. Also the “wonder metals”—uranium, germanium, columbium and titanium—of the era of jet flight, non-corrosive alloys and atomic power are found or produced in Canada. The nation is, however, merely at the beginning of a resource development unparalleled in its earlier history; one whose potential, only now being outlined, will require generations of purposeful effort and skill to realize.

In Canada, most of the hidden treasures of its natural resources lie in formidable country—rock, bush, muskeg, permafrost—and at great distances from its industrial centres. To assist in opening up resource areas of promise, the Federal Government has initiated a program called “Roads to Resources”. On a 50-50 cost sharing basis, the federal and provincial governments are investing \$145,000,000 in building more than 4,000 miles of roads to otherwise inaccessible store-houses of natural wealth. While mining, forestry, fishing and the tourist industry are the principal resources these roads will benefit, the main emphasis in the choice of routes is on the development of an area as a whole, so that each road should reflect some lasting benefit to the economy, rather than tie development to a single resource that may become worked out within a fairly brief term of years.

In the Yukon and Northwest Territories, the Federal Government has undertaken full responsibility for the construction of development roads. These roads are likely to be concentrated on the development of mining, including oil and gas, and on providing improved access between north and south and within the north itself.

Some unusual developments of local industry in the North were recorded in 1959. Under the Co-operatives Ordinance passed in that year, an Eskimo co-operative was established at Cape Dorset, 1,300 miles north of Montreal, to operate a tourist camp for sport fishing, and its first season of operation was an encouraging success. A fishing and handicraft co-operative was started at



Taylor Flats. The \$15,000,000 plant strips propane, butane, and is sold in the area as fuel; late in 1958, the plant has c



natural gas processing plant at Taylor, B.C., in northeastern British Columbia. Situated on the Peace River, this sulphur from the sour natural gases. Elemental sulphur is produced in the sulphur extraction plant; propane residue gas is sent by pipeline to southern British Columbia and the State of Washington, U.S.A. Completed capacity of 300,000,000 cu.ft. per day.

Port Burwell, and co-operatives at Frobisher Bay and in Ungava have established that there is a good market for Arctic char at high prices in southern Canada. Eskimo graphic art from Cape Dorset has also become a substantial source of income.

Not only is the opening up of new resources vital to the Canadian economy, but the conservation of those now under exploitation is equally important. Preparations for a national conference to be held in Montreal in September, 1961 and to be called the "Resources for Tomorrow" Conference, are now under way. Two federal-provincial meetings have been held, in November 1958 and December 1959, to define the scope of the conference and to make plans for its implementation. Under discussion will be the renewable resources including soil, water, forests, wildlife, fish, and recreational facilities, with the objective of providing information on resource management for the benefit of all persons and organizations concerned with these resources.

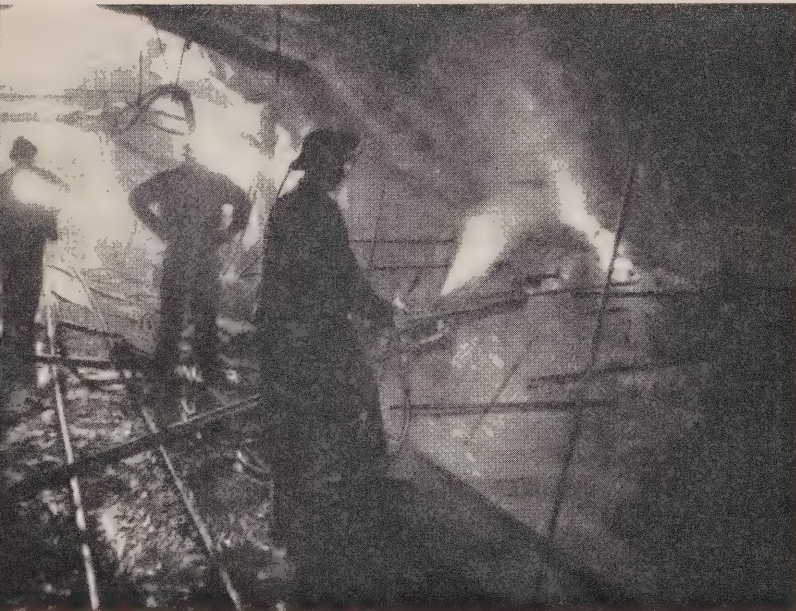
Mining

The headway that Canada has been making in the development of its great wealth of minerals is strikingly apparent from the fact that the annual value of its mineral output increased from \$1,045,000,000 in 1950 to an estimated record total of approximately \$2,400,000,000 in 1959. In that year the

value of metal output alone at \$1,359,000,000 was \$314,000,000 greater than the total value of mineral output in 1950. Moreover, there is considerable indication that the industry's growth potential is much greater than the expansion it has experienced to date. The potential reserves of some of our mineral resources—iron ore, crude petroleum and natural gas in particular—are greater by far than was realized even as recently as 1950. The known, probable, and possible reserves of all three are sufficiently large to place Canada well to the forefront in the abundance of its supplies of them.

Nor are the possibilities for growth confined mainly to the development of the resources of these minerals, for in its great wealth of nickel, copper, lead, zinc, asbestos, salt, potash and many other metals and minerals Canada has the basic requirements for the expansion of its mineral economy well into the future; of its whole economy, in fact, for all phases of it benefit directly or indirectly to a varying extent from mineral resources development. From 1950 to 1959, for instance, a total of many billions of dollars has been expended in Canada in the construction of petroleum and natural gas pipe lines, oil refineries, the development of power sites and the construction of railroads into new mining areas, all of which expenditures have stemmed from the exploitation of mineral deposits throughout the country. Actually, this exploitation and the developments that have arisen therefrom have accounted for the major share of the industrial growth Canada has witnessed since the war. It is a truly remarkable illustration of the benefits that can be derived by a country which lists among its natural assets a vast and diversified mineral estate. The production, in large and increasing quantities, of crude petroleum, natural gas and iron ore, a development of comparatively recent years, gave Canada the well-rounded diversity of output that a nation must have to maintain a forefront position in the world of industry.

Each year, commencing with 1953, crude petroleum has been the greatest single contributor to Canada's mineral output with a value in 1959 of



Though still fifth in value of Canada's minerals, the quantity of gold produced in 1959 continued a downward trend. The premium on the Canadian dollar in relation to that of the United States has effected a reduction in the mint price of gold. More than 60 gold mines are in operation in Canada.



\$426,950,000, a new record. It was followed in order in 1959 by uranium valued at \$324,549,000, nickel at \$257,200,000, copper at \$233,300,000, iron ore at \$186,206,000, gold at \$149,213,000 and asbestos at \$106,592,000. Five other minerals, namely sand and gravel, zinc, cement, coal and stone in that order, had output values in excess of \$50,000,000. Potash, its output valued at \$840,000, appeared on the list for the first time, although production of the mineral actually commenced late in 1958, the source being a property in Saskatchewan. It forms part of what is believed to be the world's largest high grade deposit of potash in the form of the minerals sylvite and carnallite. The deposit lies at depths of 2,800 to 3,400 feet beneath a large area of southern Saskatchewan and southwestern Manitoba and reserves have been estimated at 6,400,000,000 tons of recoverable potash.

To tap the vast resources of iron ore at Lac Jeannine in northern Quebec, the Quebec Cartier Mining Co. plans to build a fully-equipped harbour on the St. Lawrence, a 193-mile railway, a 60,000 hp. hydro-electric power plant and a beneficiating plant—the largest in the world—capable of producing 8,000,000 tons of concentrate a year. Two modern townsites will house 6,000 people.



Metals and minerals and their products figure very prominently in Canada's export trade accounting in value for 39 p.c. of the total of this trade in 1959. In the main, world demand for the products of the mines showed considerable improvement compared with 1958. A sustained demand for copper in Canada and the United States during 1959 offset the effects of a softening of demand in the European market and a reduction of purchases by Soviet bloc countries. Preliminary estimates of world production versus consumption in 1959 indicated an over-supply of approximately 100,000 tons for 1959, but this forecast was upset by the work stoppages that extended from August through, in most cases, to late December at most of the major producers and custom smelters in the United States. Depletion of world stocks of copper, owing to these prolonged strikes and to sporadic strikes in South America and Africa coupled with a steady rise in world demand, will likely provide a ready market for copper in the first half of 1960. Providing the labour situation clears; it is expected that the supply of refined copper will equal demand by the end of June, 1960 and will possibly be in excess of needs later in the year.

General market conditions for nickel were good, with supply and demand in close balance, the latter being the result of the depletion of the International Nickel Company's stocks during the labour strike and from an increase in industrial demand in Europe and United States.

Restrictions on imports of lead and zinc into the United States were a primary concern of Canadian producers. The United States Tariff Commission began an investigation of lead and zinc products in August, 1959 to ascertain whether these were making the quotas on unmanufactured zinc ineffective. Early in September, 1959 a broad investigation was begun on both unmanufactured and manufactured lead and zinc in order that mining of the two metals in the United States might be conducted on a stable basis. The results are expected to have an important effect on that country's mineral policy. The import quotas became effective in the last quarter of 1958.

An increase of 15 p.c. compared with 1958 in Canada's exports of asbestos reflected a strengthening in the world market for this mineral during 1959 as near-normal buying was resumed by consuming industries. The strike in the United States steel industry affected the fibre market, particularly for the textile grades.



Metals

The marked increase in the demand for nickel, copper and iron ore and in the production of uranium was mainly accountable for the \$229,000,000 increase over 1958 in the total value of metal output in 1959. The value of the platinum metals was appreciably higher than in 1958 and those of gold and lead were somewhat lower.

Although uranium again headed the metal group in the value of output, Canada was replaced by the United States as the leading uranium producer in 1959. About 74 p.c. of the Canadian production of uranium concentrates in 1959 came from the mines in the Blind River area in Ontario, 17 p.c. from those in the Beaverlodge area in Saskatchewan and the remainder from the Bancroft area in Ontario and the Eldorado mine at Port Radium, Northwest Territories. During the year 23 mines and 19 treatment plants, employing 13,000 people, were in operation in Canada, but by the year-end only 20 mines and 17 mills were operating.

A major development of the year was the decision of the United States Atomic Energy Commission not to exercise its option to purchase Canadian uranium after the present commitments expire. As a result of this decision, arrangements were made to allow companies to stretch out the remaining portion of the undelivered uranium under firm contract until 1966, and at the same time to permit the transfer of uranium sales contracts between companies. Under the circumstances, it seems likely that Canada's production for some time ahead will be considerably short of the record established in 1959.

Canada's nickel production in 1959 was 33 p.c. greater than in 1958 and was close to the all-time record attained in 1957. All companies operated at full capacity, except that output from the International Nickel Company of Canada Limited was partly curtailed in January as an aftermath of a labour strike in 1958. The company's five mines in the Sudbury area are the sources of about 77 p.c. of Canada's annual output of the metal, the remainder being from the mines of Falconbridge Nickel Mines Limited, also in that area, and the Sherritt Gordon's Lynn Lake operations in northern Manitoba, the North Rankin mine on the west coast of Hudson Bay, N.W.T., and Giant Nickel Limited, near Hope, B.C. The Canadian output in 1959 was 80 p.c. of the estimated free world total and 64 p.c. of the estimated world total.

International Nickel has been developing its Thompson mine in northern Manitoba toward production. Construction work has been proceeding apace and the new nickel refinery is scheduled to commence production late in 1960 and to reach capacity of 37,500 tons of nickel annually in 1961.

Falconbridge Nickel has completed its expansion program and now has an annual mine production capacity of about 30,000 tons of nickel. Sherritt Gordon and North Rankin Mines Limited extended their agreement whereby North Rankin is to deliver up to 14,000 tons of nickel in the form of concentrates during the 1960-64 period.

◁ In northern Manitoba, the International Nickel Co. will bring its Thompson mine into production at an annual rate of 75,000,000 lbs. Its \$175,000,000 project involves the building of a concentrator, an electric smelter, a refinery and a power plant, as well as a town of 8,000 people, planned to expand to 12,000.

Ore reserves of Canada's nickel mines are the highest in the history of the industry. International Nickel Company's reserves in the Sudbury area are 264,628,000 tons containing 7,963,000 tons of nickel and copper. Falconbridge Nickel has close to 44,000,000 tons and Sherritt Gordon close to 15,000,000. Reserves in the area of the Thompson mine in northern Manitoba are sufficient for at least 100 years at the intended daily rate of ore production.

Copper production reached a record total of 394,893 tons, a gain of close to 50,000 tons over 1958. About 45 p.c. of the output comes from Ontario, 34 p.c. from Quebec and the remainder from Saskatchewan, Newfoundland, Manitoba, British Columbia and the Northwest Territories, in that order. The International Nickel Company of Canada Limited, Canada's largest producer of copper, obtains its output from its five mines in the Sudbury area. Development of the company's Crean Hill mine was resumed in 1959. Falconbridge Nickel Mines Limited produces copper-nickel matte from ore from its five mines in the same area and ships the matte to its plant at Kristiansand, Norway for refining. Geco Mines Limited and Willroy Mines Limited in the Manitouwadge area are the two other copper producers in Ontario, Geco being fourth on the list among Canadian producers of the metal.

Hudson Bay Mining and Smelting Company Limited, Canada's second largest producer of copper, operates three mines in Manitoba and Saskatchewan and a concentrator and smelter at Flin Flon, Manitoba. Blister copper from the smelter is shipped to the plant of Canadian Refiners Limited at Montreal East for refining.

Quebec accounted for 34 p.c. of Canada's copper output in 1959, the main producers being Noranda Mines Limited, which treats concentrates from its Horne mine and from most of the mines in eastern Canada; Gaspé Copper Mines Limited, Murdochville (which in 1959 replaced Noranda as Canada's third largest producer of copper), the anodes from whose smelter are also refined at Montreal East; and Campbell Chibougamau Mines Limited, which commenced production from a property leased from Merrill Island Mining Corporation Limited.

Newfoundland's output of 15,800 tons of copper came from the Buchans mine in central Newfoundland and from Maritime Mining Corporation's Tilt Cove mine in northwestern Newfoundland.

British Columbia reported an output of 6,124 tons and Northwest Territories an output of 437 tons in 1959.

Shipments of iron ore reached a record high of 24,500,000 short tons in 1959, of which Quebec accounted for 46 p.c. and Ontario and Newfoundland each for about 25 p.c., the remainder being from British Columbia. Developments in the industry in recent years provide further evidence of Canada's steadily increasing potential as a producer of iron ore. Actually the ore is now known to occur in such abundance that Canada could maintain a rate of output several times greater than that of 1959 for many years to come. Most of the recent growth has been based on large reserves of direct-shipping ore in Labrador-Quebec and, to a lesser extent, in Ontario. Of much more importance to future growth have been the technological advances in iron ore beneficiation. These make possible the development of many low-grade iron formations which are relatively common in Labrador, Quebec and Ontario. This growth will mean the expenditure of large sums of money. In the past decade, for instance, about \$400,000,000 was spent on machinery and construction, whereas



The Gaspé Copper Mines Ltd. installation at Murdochville, Que., which in 1959 replaced Noranda as Canada's third largest producer of copper.

projects now planned indicate capital expenditures of about \$700,000,000 during 1960-64.

Canada's main producers of iron ore, in order of output in 1959, are Iron Ore Company of Canada, Limited, in the Quebec-Labrador region, Steep Rock Iron Mines Limited near Atikokan, 140 miles west of Port Arthur in Ontario, Dominion Wabana Mines Limited on Conception Bay, Newfoundland, and Algoma Ore Properties Limited in the Michipicoten area, Ontario. These companies all have huge reserves and in the meantime other companies, also with large reserves, are developing their deposits toward production. The largest of these, Quebec Cartier Mining Company, is developing one of its deposits at Lac Jeannine in the Mount Reed area in Quebec for production early in 1961 and is testing other large deposits between Mount Reed and Mount Wright. The Lac Jeannine development involves the excavation of a deep water terminal at the new town of Port Cartier, the construction of another town near the mine, a 193-mile railway, a 60,000-hp. power development and a beneficiation plant. Twelve other companies have prospects in the area.



The strong position of the Canadian dollar in relation to the United States dollar, coupled with increased labour costs under new labour agreements, acted as a deterrent to an increase in gold production in 1959 and to further development of potential new mines. Total gold production amounted to 4,444,845 ounces valued at \$149,213,400, the value being about \$6,000,000 lower than in 1958. Ontario, long the main producer, accounted for about 60 p.c. of the output, Quebec 22, Northwest Territories 9 and British Columbia 4. Lode gold mines account for about 85.7 p.c. of the output, base metal mines, 12.7 p.c.

and placer operations the remainder. The lode gold output in 1959 came mainly from 13 mines in Quebec, 30 in Ontario, three in Northwest Territories and two in British Columbia. Most of the placer output is from the Yukon.

The Federal Government has announced its intention to ask Parliament to extend the Emergency Gold Mining Assistance Act. This Act provides assistance to the gold mines whose average cost of production exceeds \$26.50 per ounce of gold produced. It has been in force since 1948.

Despite unfavourable market conditions, Canada's production of lead in 1959, at 186,499 tons, was only slightly lower than in 1958. Output of zinc, however, at 394,458 tons, was about seven p.c. lower. British Columbia produced about 80 p.c. of the lead and 50 p.c. of the zinc, the principal Canadian producer of both metals being the Consolidated Mining and Smelting Company, whose chief source of output is its lead-zinc-silver mine at Kimberley, British Columbia. Saskatchewan and Manitoba together accounted for 16 p.c. of the zinc output, Ontario 12 p.c., Quebec 11 p.c., Newfoundland and the Yukon the remainder. The rest of the lead output came from Newfoundland, the Yukon, Quebec and Ontario.

Canada has long been a leading exporter of lead and zinc, the lead mainly in the refined form and the zinc mainly in the form of concentrates. The exports are chiefly to the United States and the United Kingdom, the other important importers being Belgium and Norway.

The value of silver output in 1959 reached a total of \$28,381,750; magnesium \$3,489,964; iron (remelt) \$7,587,000 and cobalt \$5,927,003.

Fuels

Gains in production, refinery runs to stills, pipeline deliveries and domestic sales were recorded by the petroleum and natural gas industry in 1959. The reduced activity in exploratory work was to be expected in view of the large proportion of shut-in capacity and the general world surplus of crude oil. Pipeline construction was considerably less than in previous recent years because the capacities of the main transmission oil and gas lines were sufficient to meet expanded market requirements in the immediate future.

The remarkable progress in the development of Canada's petroleum and natural gas resources since 1950 is apparent from the statistics dealing with various phases of the industry. These show that reserves of crude oil increased from 1,000,000,000 barrels in 1950 to 3,400,000,000 barrels at the end of 1959 and of natural gas from 4,700,000,000,000 cubic feet to almost 30,000,000,000,000. During the same period, the annual production of crude oil rose from 29,000,000 to 185,000,000 barrels and of natural gas from 74,900,000,000 to 427,800,000,000 cubic feet. Capital investment in the petroleum and natural gas industry increased from \$156,000,000 in 1950 to more than \$600,000,000.

In quantities, Alberta accounted for about 70 p.c. and 8 p.c. respectively, the remainder of the crude oil production being from Manitoba, Ontario, British Columbia, Northwest Territories and New Brunswick and of the natural gas from British Columbia, Ontario, New Brunswick and Northwest Territories.

One of the most significant oil strikes during 1959 was that made by Western Minerals Limited with its Chance No. 1 well in the Yukon, 325 miles



Special equipment, produced in Canada, permits seismic crews to continue the search for oil during the summer when northern muskeg turns to mud. This tandem tractor treads more lightly than a man and carries equipment capable of drilling to a depth of 1,500 feet.

northwest of Norman Wells in Northwest Territories, site of the closest previously discovered oil. The success in this virgin Yukon region extends the boundaries of oil in the western Canada sedimentary basin to within 200 miles of the Arctic coast. Other noteworthy oil discoveries included Atlantic Refining Company's well at Marlboro, about 125 miles west-northwest of Edmonton, the Hudson Bay Oil Company-Union Oil Company discovery at Eaglesham, 32 miles north of the Sturgeon Lake field in Alberta, and two others near Red Deer, Alberta.

The most important natural gas discoveries in Alberta in 1959 were Shell Oil Company's Worsley find in the Clear Hills region and British American Oil Company's Lookout Butte well about 10 miles south of the large Pincher Creek field. In British Columbia two significant gas wells were completed in the northern part of the province by Gulf State Oil Company of Canada and El Paso Natural Gas Company. Exploration in the region has been exceptionally active and has spread across the Northwest Territories border.

No oil refineries came on stream during 1959 but the two under construction were expected to be in operation by mid-1960 and will bring the total number of operating refineries to 44. In terms of crude oil refining capacity Canada now ranks third, being headed only by United States and United Kingdom. Twenty-eight natural gas processing plants were in operation at the end of 1959 and plans call for about 12 more in the near future.

For the third year in succession, production of coal continued to decline, the output in 1959 at 10,597,255 tons being more than 1,000,000 tons lower than in 1958. There are indications, however, that the use of coal to develop electric power will increase considerably in the years ahead, although much of the coal so used will be of United States origin.

Non-Metallics

Headed by asbestos valued at \$106,591,686, the industrial minerals, including the structural materials, reached a total value of \$490,545,275 in 1959, a gain of more than six p.c. over 1958. As most of the minerals are used within the country, the gain is a reflection of Canada's continuing industrial growth. Records in production were established by gypsum, lime, nepheline syenite, salt, talc and soapstone, sand and gravel, cement and clay products.

A major development in the asbestos industry was the decision by Canadian Johns-Manville Company in 1959 to expand its open pit at Asbestos, Quebec. Within the next two or three years it is planned to supply mill feed entirely from open-pit workings and to close the underground mine. Changing economic conditions and techniques have made this possible. When fully developed the pit is expected to be able to handle 30,000 tons of asbestos rock and 12,000 tons of waste daily.

Another asbestos development of significance is underway in northern Ungava, about 30 miles from tidewater at Deception Bay, where Murray Mining Corporation Limited has a 50-square-mile concession. The company plans to undertake an intensive diamond drilling program in an endeavour to outline a substantial tonnage of the mineral.

Quebec has long been the leading world producer of asbestos, its output of 984,528 tons in 1959 valued at \$94,652,347 being about 95 p.c. of the Canadian total. All of the province's output comes from deposits in the Eastern Townships. British Columbia was next with an output of 34,025 tons valued at \$8,219,339, the source of its output being Cassiar Asbestos Corporation's mine in northern British Columbia. Ontario produced the remaining 23,700 tons valued at \$3,720,000, all from deposits in the Matheson area in northern Ontario.

Difficulties encountered in shaft sinking will likely delay production from the aforementioned potash deposits in Saskatchewan until toward the end of 1960. The main centres of activity are a 25-mile belt extending southeast from Yorkton to the Manitoba boundary and a belt of about 140 miles extending from west of Saskatoon to Quill Lakes.

With the development of natural gas fields in the West, Canada is becoming an important source of elemental sulphur. As recently as 1952 its needs were met entirely by imports, whereas at present large quantities are available for export. Canada now ranks about fourth in consumption and fifth in production of sulphur in all forms in the free world. Elemental sulphur obtained from the cleansing of sour natural gas from western Canada accounts for about 30 p.c. of the total output. At the end of 1959, six recovery plants in Alberta and one each in Saskatchewan and British Columbia had a combined annual capacity of 590,000 long tons of elemental sulphur, their total output in 1959 being 250,000 long tons. With the completion of the third unit of its recovery plant at Pincher Creek, Alberta in 1959, British American Oil Company Limited has the largest elemental sulphur operation in the British Commonwealth. Elemental sulphur is also recovered in Eastern Canada, by Laurentide Chemicals and Sulphur Limited at Montreal East and by the International Nickel Company of Canada Limited at Port Colborne, Ontario.

This underground salt mine at Goderich, Ont., is one of two new mines opened in November 1959, the other being in Pugwash, N.S. The Goderich shaft was carried to a depth of 1,860 ft., including a 600-ft. section of water-bearing dolomites in which waterflows of up to 10,000 gallons per minute were encountered.



Canada's salt industry has also been experiencing remarkable growth. Production has more than tripled in the past six years, having reached a new record of 3,233,500 tons in 1959. The growth has been due to expansion in the mining of rock salt, increased exports and growth of the Canadian market. Ontario, with an output of 2,983,100 tons in 1959, is by far the leading producer and is followed in order by Nova Scotia, Alberta, Saskatchewan, and Manitoba.

Production of gypsum, at 5,941,300 tons in 1959, was about 2,000,000 tons higher than in 1958, mainly as a result of the settlement of a labour dispute that had curtailed quarry operations in Nova Scotia in 1958. That province accounted for 87 p.c. of the output in 1959, the remainder being from Ontario, Manitoba, British Columbia, New Brunswick and Newfoundland.

Producers' shipments of clay products, cement, lime, sand, gravel and stone exceeded \$314,000,000 in value in 1959. For several years following World War II considerable quantities of cement were imported into Canada but, as a result of the expansion of production facilities that has since taken place, imports are now insignificant and Canada is exporting about five p.c. of its cement production to the United States. In recent years the consumption of ready mixed concrete has grown remarkably and now accounts for more than 25 p.c. of all the cement used in Canada. Output of clay products in 1959 reached a record \$45,000,000.



Nova Scotia accounts for more than 80 p.c. of Canada's gypsum exports.

Mineral Production, by Province, 1958 and 1959

Province or Territory	1958		1959 (prelim.)	
	Value	P.C. of Total	Value	P.C. of Total
	\$		\$	
Newfoundland.....	64,994,754	3.1	72,306,838	3.0
Nova Scotia.....	62,706,891	3.0	59,485,519	2.5
New Brunswick.....	16,275,971	0.8	18,390,985	0.8
Quebec.....	365,706,489	17.4	432,819,808	18.1
Ontario.....	789,601,868	37.5	962,757,451	40.3
Manitoba.....	57,217,569	2.7	58,066,665	2.4
Saskatchewan.....	209,940,966	10.0	213,743,508	9.0
Alberta.....	345,939,248	16.5	378,142,642	15.8
British Columbia.....	151,149,136	7.2	157,281,488	6.6
Northwest Territories.....	24,895,390	1.2	24,266,817	1.0
Yukon.....	12,310,756	0.6	12,421,558	0.5
Totals.....	2,100,739,038	100.0	2,389,683,279	100.0

For a table showing quantities and values of minerals produced in 1958 and 1959, see p. 316



Forestry

The native trees of Canada are Canada's most important renewable resources. There are vast forests growing on land that could not be used for any other crop, and these forests—"the bush"—are often situated near swiftly-flowing rivers, which provide transportation for the sawn logs and electric power for sawmills. So vast have these forests seemed that it was only in comparatively recent years that it was realized that the accessible woods were in danger of depletion. Today scientific forest management, conservation and reforestation are ensuring the perpetual use of the coniferous softwoods, on which the pulp and paper industry is based, and the deciduous hardwoods, which supply the lumber industry. Greater use is being made of by-products formerly discarded, and from the living forest Canadians derive one in every thirteen dollars of their incomes. About 12 p.c. of the net value of production of all the primary industries—forestry, mining, agriculture, fisheries and trapping—comes from the forests, and they are the source of almost a third of all Canadian exports.

East of the Rockies, cutting of pulpwood begins in the middle of May and is very largely completed by Christmas. The mills must estimate consumer demand up to two years in advance as it takes that time for pulpwood to be cut and moved to the mill.



✓ Of the total forest area of Canada, almost 56 p.c. may be classified as productive. The remaining unproductive areas are found chiefly along the northern edge of vegetation where the small size of the trees and the slowness of their growth combine to give them little potential value. The productive forest—that capable of producing continuous crops of wood of commercial value—covers an area of 955,000 sq. miles and of this area some 715,000 sq. miles are at present classed as accessible and carry an estimated supply of 589,000,000,000 cu. feet of merchantable timber.

Accessibility, however, is only a relative term. With the building of a road, a railway, a mill, or even a dam, inaccessible forests become accessible and the wood in them may be harvested economically. Nor does the term accessibility necessarily connote distance. There are sources of timber relatively close to industrial centres which remain untapped only because other areas lend themselves more readily to current demand for particular products and species. Of the accessible productive forest area, 55 p.c. is comprised of softwood types, 22 p.c. of mixedwood and 12 p.c. hardwood, the remainder being unclassified. There are more than 150 tree species in these forests, 31 of them conifers.

The major part of the forested area of the country is owned by the Crown, that is, by the people of Canada. Of the total forest classed as productive, 9.4 p.c. is privately owned, 20.1 p.c. is leased by the Crown to the forest



In B.C. logging camps, heel-boom loaders, known as "cherry pickers", are used to load giant logs onto the logging trucks.

industries, and approximately 70.5 p.c. is unleased Crown land. Thus every Canadian has a direct interest in the forests, their nature, their future and the wealth they create for the country. The provincial governments administer the Crown land within their boundaries except for National Parks and other areas under the jurisdiction of the Federal Government. The latter also administers the forests in the more than 1,500,000 sq. miles of land area in the Yukon and Northwest Territories.

Forest conservation problems include population and resource demands, technological changes, the adequacy of inventories, forest genetics and research and future world demand for pulp and paper. Here a forestry engineer checks maps showing areas to be logged in the 21st century.



Through appropriate management the productivity of the forest can be maintained indefinitely or even increased. Depletion by cutting, fire, insects, disease and natural mortality tends to reduce the volume of the growing stock, but average annual utilization, about 3,000,000,000 cu. feet, together with losses by fire, are still much less than the annual growth of the forests. Nevertheless, the drain on the forest is increasing, prompting governments and industry alike to plan for greater productivity by more intensive forest management, by harvesting over-mature forests and by restoring forest cover on millions of acres which were denuded by fire and overcutting, or which were cleared for agriculture and later abandoned. There is now much more efficient utilization of timber cut. More pulp and paper is produced from a cord of wood today than even a few years ago, and the use of more species brings greater returns per acre of woodland. More commercial products like alcohol, tanning liquor, road binders, and turpentine are made from what were formerly waste materials in the production of pulp. The manufacture of rayon and cellulose products, plastic wood products, fibreboard, laminated wood and wood particle products is permitting the utilization of inferior grades of wood and species of trees.

Forestry knowledge is continuously being developed and accumulated with the object of promoting the most efficient use of the Canadian forest resource.

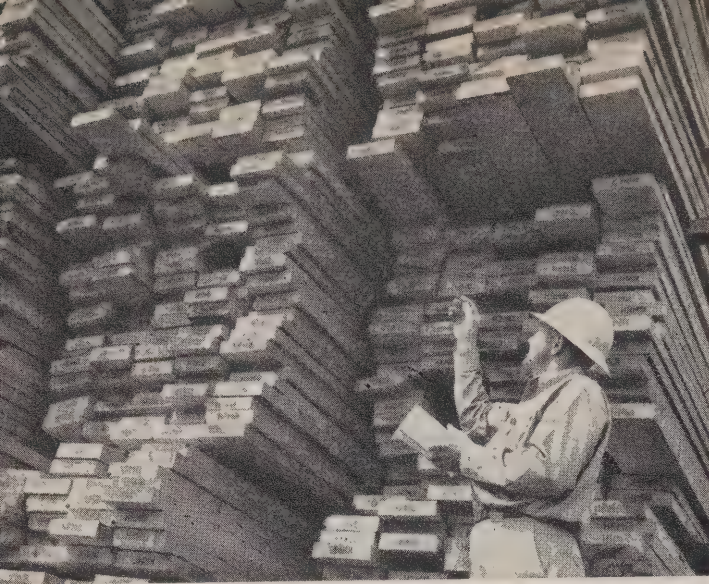
Forest Industries

The forest industries of Canada may be considered to consist of woods operations, the lumber industry, the pulp and paper industry and the wood-using and paper-using groups of industries. The latter use partially manufactured wood, pulp or paper as their raw materials.



Canada's many waterways provide a cheap and convenient means of transporting to the mill more than 80 p.c. of the wood used in pulp and paper manufacture. Often more than one company will use the same river, and sorting of the specially marked logs is done at the sorting boom on the river.

Woods Operations. The harvesting of the forest crop has become in many areas a highly mechanized operation, with methods varying with the terrain and the character of the forest. West of the Rockies, operations are generally quite different from those in Eastern Canada. There the mild climate often permits year-round work in the woods, and the size of the trees and the rugged terrain require the use of costly, heavy, mobile mechanical equipment and good roads or water transport facilities. In eastern areas where the trees are smaller and the cutting of pulp-wood predominant, woods operations are more seasonal and generally performed by workers who regard



More than 67 p.c. of the sawn lumber produced in Canada in 1958 came from British Columbia. Lumber is used in the following industries: furniture; sash, door and planing mills; veneer and plywood; hardwood flooring; boxes, baskets and crates; wood-turning; coffins and caskets; cooperage; woodenware; lasts, trees and wooden shoe-findings; beekeepers' and poultrymen's supplies; excelsior; and others.

three or four months each year in the woods as part of their calling. Operations in the east are less highly mechanized but a strong tendency is evident there for more and more equipment to be used. The power saw is almost universally employed while the use of snowmobiles, heavy diesel trucks and tractors, mechanical loaders, log skidders and cable yarding equipment is becoming more common.

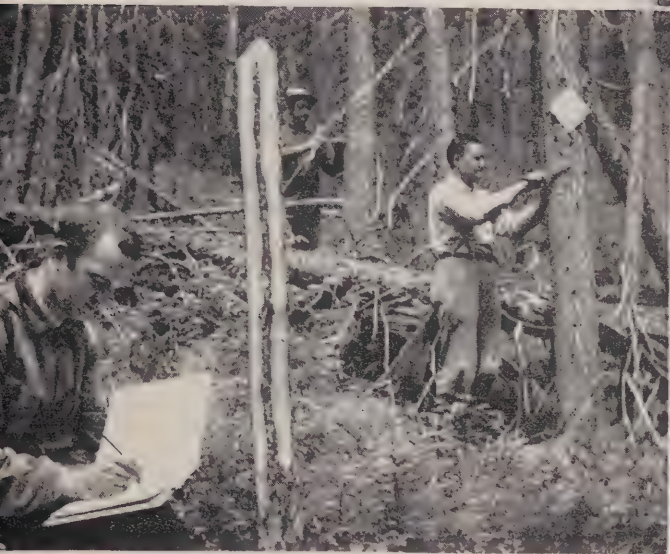
The output of Canada's forests in 1957 amounted to 3,172,000,000 cu. feet of solid wood, with products valued at \$823,054,498. This includes logs, pulpwood, bolts, fuelwood, poles, railway ties, and other primary products. Minor products include Christmas trees, cascara bark, balsam gum, resin, etc. Over 94 p.c. of the timber cut in 1957 was processed to some degree in Canada. Estimates of output for 1958 indicate a decrease of about 120,000,000 cu. feet from the 1957 figure.

With regard to volume of production of primary products, in 1958 logs and bolts were the most important products in Canada as a whole and in British Columbia, Alberta, Nova Scotia and in the Yukon and the Northwest Territories as well. Pulpwood was most important in all the other provinces except Saskatchewan and Prince Edward Island where fuelwood took the lead.

Lumber. The lumber industry in Canada is particularly dependent upon the general economic condition of the country and on the state of foreign markets. The effects of fluctuating demand are more noticeable in British Columbia than elsewhere in Canada because of the dependence of that province on the lumber industry. This is illustrated very clearly in the provisional figure for lumber production for 1959, which stands at 7,296,760,000 ft. b.m., fractionally higher than the 1958 figure of 7,179,080,000 ft. b.m. British Columbia production was down by 6 p.c., but the other provinces, except Saskatchewan and Alberta, recorded increased production, New Brunswick by as much as 39 p.c., Manitoba and Prince Edward Island by more than 24 p.c. each, Nova Scotia by 17 p.c., Quebec by 16 p.c. and Ontario by 10 p.c.

Canadian sawmills vary greatly in size and in product. Some, particularly in British Columbia, are capable of cutting up to half a million feet board measure in a single shift. Others are small enterprises turning out one or two thousand feet a day. Spruce continues to lead Douglas fir in quantity sawn but the position is reversed when market values are computed. These varieties are closely followed, in volume, by hemlock, cedar, white pine and jack pine, balsam fir, yellow birch and maple.

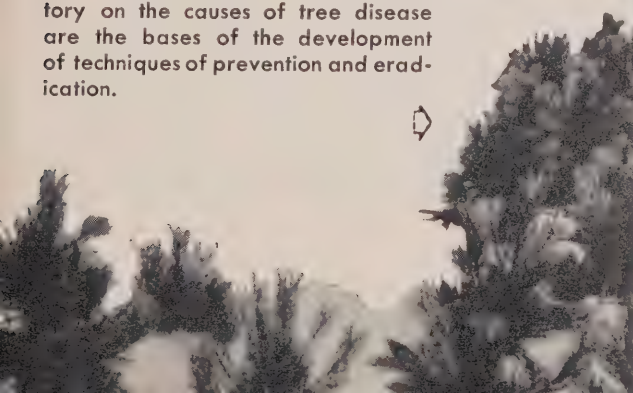
Measuring the growth and behaviour of trees contributes to the science of forest conservation.



Forest research is carried on unceasingly by both federal and provincial governments and by lumber companies toward an understanding of the processes involved in forest origin and development, a knowledge of how to protect the forest from fire, insects and disease and how to develop strains of trees superior to those now existing.



Studies in the field and in the laboratory on the causes of tree disease are the bases of the development of techniques of prevention and eradication.





In this integrated pulp, paper and small log sawmill on Vancouver Island are produced kraft pulp and paper and newsprint, as well as lumber. In the foreground is the world's only pulp tanker, the SS *Duncan Bay*, which transports kraft pulp in shredded or "noodle" form to a California paper mill.

There were 5,769 active sawmills of all kinds in Canada in 1958, a drop from 6,276 in 1957. They employed 47,763 employees who earned \$142,700,044 in salaries and wages. The industry produced 7,179,080,000 ft. b.m. of lumber with a gross value of \$459,900,750. About 64 p.c. of this production was exported at a value of \$293,600,203.

Pulp and Paper. The manufacture of pulp and paper has been Canada's leading industry for many years. It stands first among all industries in value of production, in exports, in total wages paid and in capital invested. It is the largest consumer of electric energy and the largest buyer of goods and services in the land. The industry has a newsprint output about four times that of any other country and provides more than 50 p.c. of the world's newsprint needs. Canada is one of the world's greatest pulp exporters and stands second only to the United States as a producer of that product.

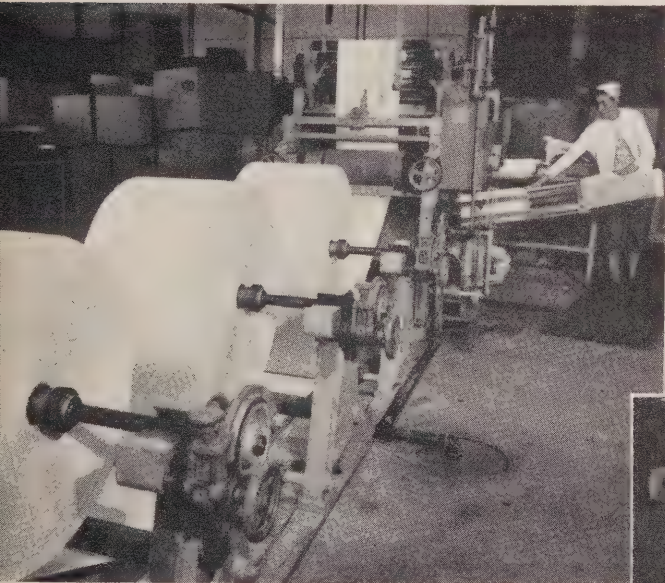
The industry includes several forms of industrial activity—operations in the woods and the manufacture of pulp, paper of all kinds and paperboard. In 1958 there were 30 mills making pulp only, 24 were making paper only and 74 were combined pulp and paper mills, some of the latter being completely integrated establishments conducting all operations from cutting to the final product of newsprint, wrapping paper, fine papers, tissues, cartons, paperboard or other wood fibre, and cellulose products. About 73 p.c. of the pulp manufactured was converted to other products in Canada; the remainder was shipped abroad. Newsprint is the top product, forming 75 p.c. of the total volume of paper and 95 p.c. of the amount of paper and paper goods exported in 1958. Quebec and Ontario together accounted for 74 p.c. of the newsprint production.

Principal Statistics of the Pulp and Paper Industry, 1930, 1940, 1957 and 1958

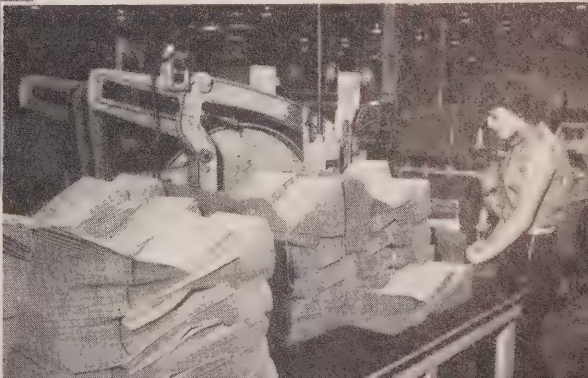
Item	1930	1940	1957	1958
Establishments.....No.	109	103	128	128
Employees....."	33,207	34,719	65,940	64,084
Salaries and wages.....\$	45,774,976	56,073,812	307,627,849	307,415,615
Gross value of factory shipments.....\$	215,674,246	298,034,843	1,411,934,462	1,394,679,180
Value added by manu- facture.....\$	107,523,731	158,230,575	693,475,562	702,950,789
Pulp produced.....tons	3,619,345	5,290,762	10,425,295	10,137,454
	\$ 112,355,872	\$ 149,005,267	\$ 706,194,649	\$ 703,365,594
Paper produced.....tons	2,926,787	4,319,414	8,299,889	8,081,293
	\$ 173,305,874	\$ 225,836,809	\$ 1,056,371,332	\$ 1,044,640,200
Pulp exported.....tons	760,220	1,068,516	2,282,656	2,219,314
	\$ 39,059,979	\$ 60,930,149	\$ 292,406,102	\$ 285,448,649
Newsprint exported....tons	2,332,510	3,242,789	5,900,625	5,682,832
	\$ 133,370,932	\$ 151,360,196	\$ 715,489,761	\$ 690,209,468

Wood-Using Industries. This group includes thirteen industries, other than sawmills and pulpmills, using wood as their principal raw material. In 1958, these industries, comprising 4,079 establishments, gave employment to 73,159 persons and paid out \$226,881,505 in salaries and wages. The gross selling value of their products was \$797,294,220. The furniture industry (which includes metal furniture as well) accounted for \$308,815,752 of the total output, the sash, door and planing mills industry for \$236,990,148, the veneer and plywood industry for \$129,954,480, and the hardwood flooring industry for \$17,736,175. The other industries making up the remaining \$103,797,665 included: boxes, baskets and crates; wood-turning; morticians' goods; cooperage; woodenware; lasts, trees and wooden shoefindings; beekeepers' and poultrymen's supplies; excelsior, etc.

Paper-Using Industries. Three industries engaged primarily in manufacturing commodities of paper and paperboard constitute this group, which in 1958 comprised 434 establishments, employed 28,851 persons and distributed \$102,162,620 in salaries and wages. The gross value of factory shipments was \$494,781,213 and the net value \$207,742,359. The paper box and bag industry contributed products valued at \$277,464,661 to the total output, the roofing paper industry \$45,892,999, and the miscellaneous paper goods industry \$171,423,553.



Pulpwood laboriously cut and transported to the paper mill may end up in your kitchen in the form of paper towels or in your groceteria as a checkstand bag.





Agriculture

Twenty years ago a worker in Canadian agriculture supplied, on the average, food enough for himself and nine other persons. Now he produces enough for himself and 22 other persons. This typifies what has commonly become known as the "agricultural revolution". So rapidly is this "revolution" changing the farming industry that its far-reaching effects may be compared to those of the industrial revolution of 180 years ago.

Among the most revealing aspects of this agricultural revolution are the decline in recent years in the number of farms and farm workers, the increase in the average size of farms, the changes in the kinds of power used by farmers to produce crops and animal products, the growth of specialization in agricultural production, the increase in capital invested in farm machinery and equipment and the larger purchases of fertilizers. The remarkable increase in the production per man-hour spent on agricultural enterprises, the increase in yields of crops, in milk per cow and eggs per hen are further evidences of the technical revolution in Canadian agriculture.

From 1941 to 1956, farm population decreased from about 3,153,500, or about 27 p.c. of the total population of Canada, to 2,746,800, or 17 p.c. The area in farms has remained practically unchanged, but the number of farms declined from 732,832 in 1941 to 575,015 in 1956, and the average size of farm increased from 236.8 to 302.5 acres. Almost all the farms in Canada are still family farms.

New sources of power have contributed greatly to the reduction in the time required by producers of agricultural commodities to carry on many

kinds of work related to their farming enterprises. From 1941 to 1956 the number of farm horses declined from 2,788,796 to 784,018, while the number of farm tractors increased from 152,607 to 388,816. The purchase of a tractor involves further purchases of machinery for use with the tractor—wider ploughs, and machinery to prepare the seed bed, control weeds and harvest. The number of farms having grain combines increased from 18,303 in 1941 to 130,384 in 1956. These larger machines reduce the amount of human labour needed and increase productivity.

Farms with gasoline engines increased by about 48 p.c., and farms with motor trucks increased more than 257 p.c. from 1941 to 1956. Rural electrification has been greatly extended and, during the five-year period 1951 to 1956, the number of farms with electric power rose from 319,383 to 422,604. Only those who have lived on farms can appreciate the relief to the farmer's wife and family that electrical appliances can provide.

The increase in productivity per man in recent years has been greater in agriculture than in any other Canadian industry. It rose by 48 p.c. between 1946 and 1957. In manufacturing, the increase was about 40 p.c.; in transportation, about 34 p.c.; in mining, about 31 p.c.; and in trade, only about 7 p.c.

Greater specialization and commercialization of agriculture are rapidly taking place. Apples, potatoes, dairy products and poultry are examples of intensive specialization. Egg production is also becoming a large scale commercial business. Small farm flocks are being replaced by large commercial production of thousands of layers in one plant with mechanical feeding, watering and cleaning equipment.

Crop yields per acre are also rising as a result of better cultural methods and more productive seeds and plants.

Of the many adjustments in agriculture associated with the technical revolution in this industry, one of the most widely discussed is contract farming, or "vertical integration". The growing and marketing of sugar beets, of canning crops, and of certain kinds of seeds under contracts have been in effect for many years, as have fluid milk and beef feeding contracts. What is new is the extension of contracts into fields where the growers have traditionally made independent production and marketing decisions, yet where certain kinds of contracts are now removing all management decisions from producer control. An outstanding example of "vertical integration" is the production of broilers. About 90 p.c. of the broilers produced in Canada are delivered under contracts of one kind or another. They may call for the delivery of broilers at a given time and at a certain price. Under another kind of contract



The horizon of the prairie farmer is limited only by the curvature of the earth.



Smaller in size than the famous Calgary Stampede, but at least its equal in skill and enthusiasm, are the many rodeos held in the ranching country of the four western provinces throughout the summer.

feed dealers may advance credit to producers for the purchase of chicks and feed, the farmer making his own marketing arrangements. Contracts may include agreements whereby a feed manufacturer or a processor furnishes chicks and feed to the grower, leases his buildings and equipment, supervises his management and pays him wages for his labour. There are also other arrangements under which the grower shares his profit in return for credit and risk sharing.

Contracts have greatly contributed to the rapid adoption of more efficient practices in the production of poultry meat and have made it available in vastly increased quantities at lower prices to Canadian consumers. In the last ten years since contract farming has been applied to the broiler industry, Canadian production of this commodity has risen to 60,000,000 a year. In a broiler enterprise there may be as many as 40,000 to 80,000 birds with four crops produced in one year.

Some features of contract farming have been extended to the production and marketing of other agricultural commodities, such as hogs, turkeys and eggs.

The adoption by farmers of new and improved techniques has made it possible for them to provide adequate supplies to satisfy the changing food requirements of Canada's population which, in the decade ending 1959, rose from 13,500,000 to 17,650,000. With higher purchasing power and a greater appreciation of the need for a better nutritional diet, Canadians are eating more per person of the higher priced foods such as fruits and vegetables, meat and eggs, and they are drinking more milk than they did ten years ago.

Besides meeting the domestic food needs of the growing population, Canadian farmers are providing commodities for an increased export trade. However, farm output has been rising faster than the demand at home and abroad, and prices of agricultural products have not risen proportionately.

The general trend of agricultural prices has been downward since 1951, while there have been upward trends in non-agricultural prices, in consumer incomes and in business investments. The cost of goods and services required by farmers has increased, while agricultural prices have not. This has put farmers in a situation which is described as a "cost-price squeeze." Surpluses have developed, due mainly to the technical revolution in agriculture and, to a lesser extent, to government price supports. The existence of these surpluses tends to depress market prices of these commodities. Thus Canadian agriculture, in contrast to the buoyant prosperity of many other industries, is in a state of depression, accentuated by the difficulty that farmers experience in moving to other lines of work. Part-time farming, where the operator obtains most of his income from a non-farm occupation, is growing rapidly.

Outlook for the Future

Capital requirements for farming operations will continue to grow in the future, with the trend toward larger and fewer commercial farm units. Economies that come from specialized, well-financed and well-managed farms will make it increasingly difficult for the small-sized, poorly managed farms to survive. Management will become a key factor in successful farm operation. Those who cannot develop their farms into economic units will eventually move to industrial occupations and the number of people on farms will continue to decline. The technical advances in agriculture, which have been responsible for the production of agricultural products in excess of effective demand, will probably delay any rapid improvement in agricultural prices but, as population and industrialization in Canada and in food-importing countries continue to grow, as surpluses disappear and effective demand becomes more pronounced, the strengthening of markets and prices should, in time, result. The long-term outlook for Canadian agriculture, therefore, should grow brighter with advancing years.



"Riding the range" on wings may be the most practical method for some ranchers whose cattle graze over vast tracts of land.

Cash Income

Returns to farmers from the sale of farm products, coupled with participation payments from previous years' grain crops, were estimated at a near record high of \$2,800,000,000 for 1958. This estimate exceeded that of 1957 by 8 p.c. and was only slightly lower than the 1952 estimate of \$2,900,000,000, the highest estimate recorded to date. The increase in cash farm income in 1958 compared with a year earlier can be attributed, in the main, to larger returns from the sale of livestock and animal products. Returns from the sale of field crops were virtually the same as in 1957.

Farm cash income in 1958 was higher in each of the nine provinces* than a year earlier. In Eastern Canada, field crops as well as livestock and animal products' receipts contributed to the increase, whereas in Western Canada the increase was due to higher cash returns from sales of livestock and animal products. Returns from the sale of field crops were lower for each of the three Prairie Provinces and for British Columbia, but their decline in the West was offset by higher returns in Eastern Canada.

Prairie farmers' cash income for 1958 was further augmented by supplementary payments amounting to slightly more than \$60,000,000. These payments were made up of disbursements of about \$21,000,000 under the Prairie Farm Assistance Act and about \$39,000,000 under the Western Grain Producers Acreage Payment Plan. The 1958 P.F.A.A. payment of \$21,000,000 was the second largest made during the post-war years, being exceeded only in 1955 when disbursements were \$33,000,000. The Western Grain Producers Acreage Payment plan, applicable only for the 1958-59 crop year, provided for \$40,000,000 to be distributed to Western grain producers on the basis of \$1.00 per specified acre up to 200 acres per farm, including acreage seeded to flaxseed. By the end of the 1958 calendar year, about \$39,000,000 of the total had been dispersed.

About 90 p.c. of Canadian farm income originates in the Prairie Provinces and the two central provinces, Ontario and Quebec. The remaining 10 p.c. is divided about equally between British Columbia and the Atlantic Provinces. Prairie farmers receive about half their farm income from the sale of field crops, principally cereal grains, whereas farmers elsewhere in Canada receive less than 10 p.c. from the sale of field crops. Livestock and animal products, fruits, vegetables, tobacco and forestry products account for the bulk of the income to farmers situated elsewhere than on the Prairies.

Total cash income from farming operations for 1958 includes income from the sale of farm products and, for western farmers, participation payments on previous years' grain crops, together with supplementary payments made under the provisions of the Prairie Farm Assistance Act, advances under the Prairie Grain Advance Payments Act and advances under the Western Grain Producers Acreage Payment Plan. Other sources of revenue, such as income from off-farm work and income from investments, are not included.

The sum of total cash income and income in kind, which represents the value of produce grown by farm operators and consumed in the farm household as well as an imputed rental value for farm dwellings, constitutes realized gross farm income. Estimated at \$3,196,000,000 for 1958, it exceeded the 1957 estimate by almost 10 p.c.

*All except Newfoundland.

Realized net income (realized gross farm income minus operating and depreciation charges) is estimated at \$1,385,000,000 for 1958, up \$185,000,000 or 15 p.c. from the estimate of \$1,200,000,000 for 1957. Net income of Canadian farmers from farming operations, which takes into account the value of inventory charges, was estimated at \$1,300,000,000 for 1958, up 20 p.c. from the 1957 estimate of \$1,100,000,000, and approximately the same as the five-year average 1953-57.

These increases can be attributed in the main to higher returns from the sale of livestock and higher supplementary payments than in 1957. The higher cash receipts were, however, tempered by higher operating and depreciation charges and a decline in year-end inventory values. Higher farm operating costs resulted from a combination of slightly higher prices and the use of larger quantities of goods and services in 1958 than a year earlier.

Estimates for 1959. Preliminary estimates suggest that cash income from the sale of farm products for 1959 will be in the neighbourhood of \$2,776,077,000. This compares with the estimate of nearly \$2,786,887,000 for 1958 and the all-time high of \$2,859,000,000 established in 1952. Returns from the sale of field crops for 1959 are estimated to be slightly above the 1958 level and returns from the sale of livestock and animal products slightly lower.

Cash Income from the Sale of Farm Products, by Province, 1956-58

Province	1956	P.C. of Total	1957	P.C. of Total	1958	P.C. of Total
	\$'000		\$'000		\$'000	
Prince Edward Island...	26,447	1.0	24,447	0.9	27,891	1.0
Nova Scotia.....	43,546	1.7	41,979	1.6	42,288	1.5
New Brunswick.....	48,373	1.8	43,897	1.7	46,096	1.6
Quebec.....	385,296	14.6	385,932	15.0	414,495	14.9
Ontario.....	780,551	29.5	789,337	30.7	863,409	31.0
Manitoba.....	210,761	8.0	200,818	7.8	220,390	7.9
Saskatchewan.....	596,992	22.6	537,506	20.9	571,545	20.5
Alberta.....	436,653	16.5	437,895	17.0	481,535	17.3
British Columbia.....	113,254	4.3	113,490	4.4	119,238	4.3
TOTALS.....	2,641,873	100.0	2,575,301	100.0	2,786,887	100.0

In 1958 the 332,700 bee colonies of 13,150 beekeepers produced 27,509,000 lbs. of honey and 408,000 lbs. of beeswax. Beekeepers' marketing co-operatives are active in several provinces.

Bees are kept in some of the fruit-growing and greenhouse districts of the country chiefly for purposes of pollination.



Cash Income from the Sale of Farm Products, by Source, 1958

Source	Amount	Source	Amount
	\$'000		\$'000
Grains, seeds and hay.....	674,475	Miscellaneous farm products....	52,839
Vegetables and other field crops..	216,363	Forest products sold off farms...	37,388
Livestock and poultry.....	1,092,276	Fur farming.....	14,559
Dairy products.....	494,955		
Fruits.....	41,448	Cash Income from Sale of	
Eggs, wool, honey and maple		Farm Products.....	2,786,887
products.....	162,584		

Net Income of Farmers from Farming Operations, 1956-58

Item	1956	1957	1958
	\$'000	\$'000	\$'000
1. Cash income.....	2,641,873	2,575,301	2,786,887
2. Income in kind.....	328,312	327,326	339,073
3. Supplementary payments..	5,004	1,987	60,128
4. Realized gross income (1 + 2 + 3).....	2,975,189	2,904,614	3,186,088
5. Operating and depreciation changes.....	1,737,096	1,704,412	1,801,523
6. Realized net income (4 - 5).....	1,238,093	1,200,202	1,384,565
7. Value of inventory changes.....	220,042	-138,694	-107,003
8. Total gross income (4 + 7).....	3,195,231	2,765,920	3,079,085
9. Total net income (8 - 5).....	1,458,135	1,061,508	1,277,562

Teen-age members of 4-H clubs study the sheep on show at the Royal Winter Fair in Toronto. 4-H clubs are composed of young farm boys and girls, many of whom raise and show their own animals.





The prairie wheat-field is the nation's bread-basket. Prairie farms average one square mile in size, and the trend is toward fewer, larger, highly-mechanized farms.

Field Crops

Crop conditions across Canada were variable in 1959. Over much of the Prairie Provinces drought was a problem for the third successive year but heavy general rains in late June helped to alleviate this situation. Although it appeared for a time that the prairie crop would be taken off early and in good condition, unseasonable snow storms and wet weather interrupted operations and as a result some 56,000,000 bushels of wheat, 26,000,000 bu. each of oats and barley and 2,600,000 bu. of flaxseed had to be left in the fields over the winter. Without the period of exceptionally good weather in November and part of December, the amount of grain remaining in the fields would have been much greater. At November 1, some 112,000,000 bu. of wheat, 78,000,000 bu. of oats, 55,000,000 bu. of barley and 8,000,000 bu. of flaxseed remained to be threshed. A large quantity of grain was harvested in a tough or damp condition. Hail losses were light but insect outbreaks required extensive control measures.

In the Maritimes, growing conditions were generally satisfactory but wet fall weather delayed maturity and hampered harvesting operations. Grain crops in Quebec, after making good progress during July, experienced drought conditions during much of August, only to have harvesting operations hindered by wet weather. Hot, dry weather in Ontario reduced yields of early crops below levels of a year earlier, but late crops like corn and soybeans matured

well and yields were good. In British Columbia, growing conditions were generally favourable and outturns of most crops were above the 1958 levels.

Total marketing of the five major grains in Western Canada in the crop year 1958-59 amounted to some 552,000,000 bu. compared with 576,000,000 bu. in 1957-58 and the ten-year (1947-48 to 1956-57) average of 578,400,000 bu. Combined exports of the five grains, including wheat flour, rolled oats and oatmeal, malt, and pot and pearl barley expressed in grain equivalent, totalled 390,000,000 bu. as against 445,900,000 bu. in 1957-58 and the ten-year average of 382,200,000 bu.

Combined stocks of the five major grains at July 31, 1959, were estimated at 810,600,000 bu., some 13 p.c. below the previous year-end carryover but 45 p.c. above the ten-year average. With near-average size crops being harvested in 1959, total available supplies for the 1959-60 crop year at 1,897,000,000 bu. were 4 p.c. below the 1958-59 level of 1,977,000,000 bu. and 15 p.c. below the 1956-57 record total of 2,239,000,000 bu. Supplies of the five major grains for 1959-60, consisting of the July 31 carryover stocks and 1959 production were estimated as follows (1958-59 figures in parentheses): wheat, 962,500,000 bu. (1,011,200,000 bu.); oats, 536,900,000 bu. (555,900,000 bu.); barley, 353,700,000 bu. (362,900,000 bu.); rye, 16,100,000 bu. (18,100,000 bu.); and flaxseed, 27,800,000 bu. (28,500,000 bu.).

Estimated Area, Yield and Production of Principal Field Crops, 1958 and 1959

Crop	Area		Yield per Acre		Production	
	1958	1959	1958	1959	1958	1959
	acres	acres	bu.	bu.	bu.	bu.
All wheat.....	20,899,100	23,064,900	17.8	17.9	371,730,000	413,520,000
<i>Winter wheat</i> ...	580,000	425,000	41.2	29.3	23,896,000	12,464,000
<i>Spring wheat</i> ¹ ...	20,319,100	22,639,900	17.1	17.7	347,834,000	401,056,000
Oats for grain....	11,039,200	11,391,300	36.3	36.7	400,951,000	417,933,000
Barley.....	9,548,000	8,288,600	25.6	27.2	244,764,000	225,550,000
All rye.....	521,400	516,600	15.3	15.8	8,002,000	8,149,000
<i>Fall rye</i>	409,900	405,700	16.6	16.8	6,792,000	6,819,000
<i>Spring rye</i>	111,500	110,900	10.9	12.0	1,210,000	1,330,000
Flaxseed.....	2,622,700	2,391,200	8.7	8.9	22,766,000	21,277,000
Mixed grains....	1,421,800	1,500,500	45.5	42.5	64,648,000	63,790,000
Corn for grain...	498,500	488,900	60.0	63.5	29,892,000	31,023,000
Buckwheat.....	102,400	83,300	20.9	19.6	2,139,000	1,629,000
Peas, dry.....	71,500	63,900	16.0	15.4	1,146,000	984,000
Beans, dry.....	67,000	68,000	21.2	21.0	1,421,000	1,430,000
Soybeans.....	263,000	251,000	25.3	27.2	6,649,000	6,828,000
			cwt.	cwt.	cwt.	cwt.
Potatoes.....	311,000	295,400	129.6	119.5	40,301,000	35,290,000
			lb.	lb.	lb.	lb.
Mustard seed....	87,325	80,140	805	613	70,292,000	49,144,000
Rapeseed.....	626,000	217,800	620	826	388,100,000	180,000,000
Sunflower seed...	48,700	42,000	454	881	22,125,000	37,000,000
			tons	tons	tons	tons
Tame hay.....	11,477,000	11,779,000	1.57	1.72	18,029,000	20,246,000
Fodder corn.....	380,800	369,000	9.89	10.74	3,767,000	3,964,000
Field roots.....	34,800	29,900	11.52	11.27	401,000	337,000
Sugar beets.....	97,845	93,646	13.54	13.04	1,324,759	1,221,200

¹ Includes relatively small quantities of winter wheat in all provinces except Ontario.

Although hot, dry weather ripened crops rapidly in July and extremely adverse harvesting conditions resulted in some lowering of grades, the 1959 wheat crop is high in protein, baking strength and supporting value. It was estimated that the crop would grade about 2 p.c. No. 1 Northern, 26 p.c. No. 2 Northern, 38 p.c. No. 3 Northern, 21 p.c. No. 4 Northern, 3 p.c. No. 4 Special and 10 p.c. other grades. There is, however, a considerable quantity of tough and damp wheat. Production of durum wheat in the Prairie Provinces amounted to some 14,700,000 bu. compared with 15,900,000 bu. in 1958.

Production, Imports and Exports of Wheat, Years Beginning Aug. 1, 1950-59

NOTE.—Until Aug. 1, 1955, wheat flour was converted into bushels of wheat at the average rate of 196 lb. of flour to 4.5 bu. On Aug. 1, 1955, conversion rate was changed to 100 lb. of flour to 2.3 bu.

Year beginning Aug. 1	Production	Imports of Wheat and Flour	Exports of Wheat and Flour	Domestic Dis- appearance
	'000 bu.	'000 bu.	'000 bu.	'000 bu.
1950.....	466,490	12	240,961	148,538
1951.....	553,678	18	355,825	169,895
1952.....	701,973	17	385,527	150,456
1953.....	634,040	457	255,081	143,926
1954.....	331,981	178	251,909	162,176
1955.....	519,178	20	312,260 ¹	164,113
1956.....	573,040	148	264,396 ¹	154,820
1957.....	385,508	1	320,293 ¹	159,308
1958.....	371,730	4	294,546 ¹	170,176
1959.....	413,520	—	—	—

¹ Revised to include bagged seed wheat.

Marketing of Major Grains. The Canadian Wheat Board, a Crown corporation in operation since August 14, 1935, is the general agency for all wheat, oats and barley produced in Western Canada and sold commercially for interprovincial or export movement. The farmer places these grains in annual marketing pools operated by the Board. He receives an initial payment at the time he delivers the grain at a country elevator or into a railway car and participates on the basis of his grain deliveries in any surplus the Board may subsequently realize on the sale of grain. Through the provision of that initial price guaranteed by the Government of Canada, the Board stands as a buffer between the farmer and the constantly changing conditions of supply, demand and price under which wheat is produced in Western Canada and throughout the world. At the same time, the distribution of participation payments carried out from time to time helps to steady the flow of farm income and to spread it throughout the year.

The Board, through a delivery quota system, also ensures the equitable use of available grain storage facilities, which is particularly important at times when producers have more grain than the normal storage facilities of the country can handle adequately. The quota is based on a producer's specified acreage, a term that refers to the combined acreage which the producer had seeded to wheat, oats, barley, rye, cultivated grasses and forage crops or had summerfallowed. Prior to the crop year 1958-59, acreage seeded to durum wheat was excluded from specified acreage. However, on January 21, 1958

Southern Alberta farmers plant Canada's largest sugar beet crop and harvest about half a million bushels, from which more than half the Canadian production of white sugar is refined. To farmers under contract to the sugar factories, sugar beets can bring a return of more than \$200 per acre.



the Board announced that effective August 1, 1958 acreage seeded to durum wheat would be considered part of the producer's specified acreage for quota purposes. At the beginning of the crop year producers may deliver a minimum quota of bushels per farm unit regardless of the specified farm acreage, and then progressively increasing quotas are established as storage space becomes available.

The Canadian Wheat Board derives its authority from the Government of Canada through the Canadian Wheat Board Act and reports to Parliament through the Minister of Trade and Commerce. Its operations have far-reaching effects on the economy of the whole country and of Western Canada in particular.

Western farmers delivered some 367,700,000 bu. of wheat in 1958-59 compared with 378,200,000 bu. in 1957-58 and the ten-year (1947-48 to 1956-57) average of 365,200,000 bu. Exports consisted of 252,200,000 bu. of wheat in bulk, 5,300,000 bu. of bagged seed wheat and the equivalent of 37,100,000 bu. of wheat in the form of flour. The combined exports went to 87 countries and their territories and colonies. Domestic utilization of commercial and farm wheat increased from 159,300,000 bu. in 1957-58 to 167,600,000 bu. in 1958-59.

Late in October the cattle of the Alberta foothills are herded home to winter range. The Alberta government issues summer grazing permits in the Rocky Mountain Forest Reserve to ranchers who are required to keep their herds moving to prevent overgrazing.



The initial payment set by the Wheat Board in the 1958-59 crop year was \$1.40 per bu. basis No. 1 Northern, in store Fort William-Port Arthur or Vancouver. The initial payment for No. 1 C.W. Amber Durum was also \$1.40 per bu. The 1957-58 pool account was closed on May 15, 1959, with producers averaging about \$1.62 per bu. for No. 1 Northern wheat.

Marketings of oats totalled 39,300,000 bu. during 1958-59 as against 58,300,000 bu. the previous year. About 7,500,000 bu. of oats and oat products were exported in 1958-59, sharply below the 1957-58 total of 26,200,000 bu. The amount of oats used in Canada was placed at 429,400,000 bu. in 1958-59 compared with 425,700,000 bu. in 1957-58. Farmers marketed some 122,800,000 bu. of barley in 1958-59 compared with 116,900,000 bu. marketed in 1957-58. Exports of barley and products in 1958-59 at 70,400,000 bu. were 12 p.c. below the 80,300,000 bu. exported in 1957-58. Domestic utilization amounted to 164,400,000 bu. in 1958-59 as against 160,400,000 bu. the previous year.

Livestock

Livestock production has recently taken over from grain-growing as the Canadian farmer's most important source of income. Cash income statistics indicate that the sale of livestock (not including poultry or such livestock products as milk and wool) surpassed in value the sale of the five major grains in four of the past five years. Farmers' cash income from livestock production in 1958 amounted to \$949,141,000, whereas that from sale of wheat, oats, barley, rye and flaxseed, including participation, adjustment and equalization payments and advances under the Prairie Grain Advance Payments Act, totalled \$649,031,000.

Remarkable year-to-year increases in cattle raising, especially in Western Canada, have occurred regularly since 1952. Concomitant with these increases have been drought-caused beef cattle shortages in the United States range areas, so that the export market for live cattle and for meat was very buoyant during 1957 and 1958. In 1957 live cattle exports totalled some 387,500 head, exceeded only three times before—in 1948, 1949 and 1950. However, at 670,500, live cattle exports in 1958 surpassed any previous year by a wide margin. Domestic demand for beef decreased in 1958 with high prices, and per capita consumption, which was at an all-time high of 74.8 lb. in 1957, fell to 64.8 in 1958.



Hog production has been characterized by a two-year cycle wherein lowered production, resulting from low prices, is followed by higher prices, generating increased production, and a return to low prices to repeat the cycle. A strong build-up of numbers on farms took place in 1958 and the first half of 1959. Farm cash income from hogs rose to \$325,000,000 in 1958, the highest since 1951. It has fluctuated within 10 p.c. of \$300,000,000 during the last ten years. Pork exports increased sharply in 1959 to 69,400,000 pounds, equalling the five year average prior to 1957, and domestic consumption per capita rose from 46.2 lb. in 1957 to 51.8 lb. in 1958.

The number of cattle on farms in Canada at June 1, 1959, was estimated to have been 11,120,000 head, up nearly 1 p.c. from 11,001,000 head in 1958. Milk cows and heifers over two years old were estimated to have totalled 3,129,000 head in 1958 and 3,108,000 in 1959, the lowest since 1953. The June 1959 hog population was estimated at 6,872,000 head, up 11 p.c. from the June 1958 figure. Sheep numbers were estimated at 1,761,000 head at June 1, 1959, an increase of 3 p.c. from the June 1958 total. Horses continued to decrease in number rapidly as the result of farm mechanization, and were estimated at only about 624,000 head.

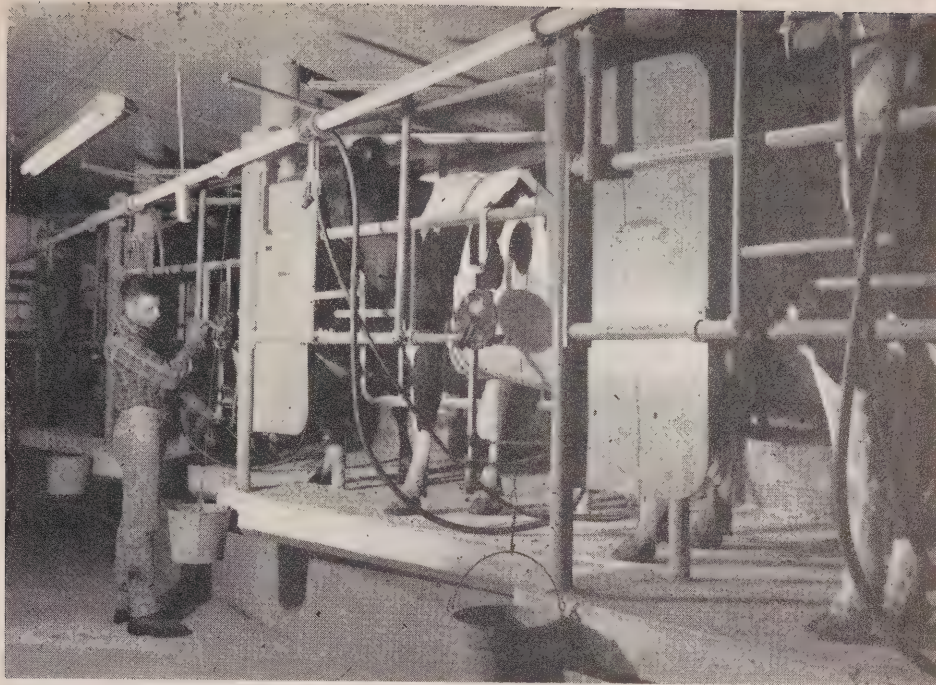
Prices for livestock in 1958 were generally favourable to the producer. Good slaughter steers, up to 1,000 lb., averaged \$22.90 per cwt. live at Toronto, while Grade A hogs at that market averaged \$29.13 per cwt. dressed. Good lambs sold for \$22.35 on the year's average.

Meat production, including edible offal, in 1958 totalled about 2,453,250,000 lb., surpassing the 1957 quantity of 2,412,500,000 lb. Domestic utilization of meat at 2,364,000,000 lb. dropped slightly from the record 2,376,000,000 lb. in 1957.

Estimated Meat Production and Consumption, 1957 and 1958

Item	1957	1958	1957	1958
	BEEF		VEAL	
Animals slaughtered..... No.	2,602,500	2,324,400	1,381,200	1,430,700
Animals exported..... "	375,673	658,095	11,859	12,389
Meat production ¹ '000 lb.	1,288,238	1,163,595	150,551	150,796
Total domestic disappearance.... "	1,240,488	1,105,530	150,081	150,237
Per capita consumption..... lb.	74.8	64.8	9.0	8.8
	PORK		MUTTON AND LAMB	
Animals slaughtered..... No.	6,515,500	7,766,400	766,800	727,200
Animals exported..... "	1,865	8,069	17,788	41,318
Meat production ¹ '000 lb.	847,015	1,012,739	33,356	31,779
Total domestic disappearance.... "	766,947	882,784	43,513	46,194
Per capita consumption..... lb.	46.2	51.8	2.6	2.7
	OFFAL		CANNED MEAT	
Production..... '000 lb.	93,362	94,339	69,540	75,909
Total domestic disappearance.... "	88,606	82,611	85,493	95,818
Per capita consumption..... lb.	5.3	4.8	5.2	5.6

¹ Production from animals slaughtered in Canada, basis cold dressed weight excluding offal and, in the case of pork, fats and offal.



Dairy farms lend themselves to large-scale, scientific methods of milk production.

Dairying

Cows kept for milking purposes were found on 70 p.c. of Canada's 575,000 farms by census enumerators in 1956. Although the milk cow is a familiar sight on most Canadian farms, herds of 13 or more were found on only 15 p.c. of them. Two-thirds of all milk produced comes from Ontario and Quebec. Near towns and cities, farmers are usually able to sell most of their milk to dairies for sale as fluid milk, fluid cream, chocolate drink, skim milk and buttermilk. Milk sold for fluid distribution commands a premium price. To produce economically a constant supply of quality milk all year 'round for this market, farmers have found it necessary to make substantial capital investment in bulk milk handling and storage facilities with a resulting increase in the size of herd. Farmers less favourably situated, or unable to break into the fluid milk market, supply milk or cream to dairy factories for manufacture into butter, cheese, concentrated milk products and ice cream. Canadian farmers sold \$515,000,000 worth of milk and cream in 1959. This was \$19,000,000 greater than such sales in 1958 and accounted for about 18.5 p.c. of total cash income from the sale of farm products.

During 1959 about 18,200,000,000 lb. of milk were produced in Canada—138,000,000 lb. more than the previous record in 1958. Of the milk supply 58 p.c. was used in the manufacture of dairy factory products, 31 p.c. was sold as fluid milk and cream, and the remainder was used on farms. Of the milk utilized for dairy factory products, 72 p.c. went into creamery butter, 20 p.c. was used for cheddar cheese and concentrated milk, and the remainder was used for ice cream and cheese other than cheddar.

Canadians use, in one form or another, almost all of the milk they produce. Some cheddar cheese, skim milk powder, whole milk powder, and evaporated milk was exported in 1959. Imports of dairy products consisted mainly of special varieties of cheese.



Canada's cattle population numbers more than 11,000,000, of which more than a third are the famous beef cattle raised in Alberta and Saskatchewan. On a gross value basis, slaughtering and meat-packing ranks among the four largest manufacturing industries in Canada.

Dairy Production, by Economic Area, 1957, 1958 and 1959

Economic Area and Year	Total Milk Production	Milk Used in Fluid Sales	Products Manufactured ¹			
			Butter		Cheddar Cheese	Ice Cream
			Creamery	Dairy		
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 gal.
Maritimes. 1957	1,097,066	359,286	18,736	2,101	1,799	2,511
1958	1,102,302	360,431	19,223	1,907	1,642	2,529
1959	1,114,572	370,624	18,180	1,561	1,957	2,864
Que. and Ont. . . . 1957	11,599,437	3,648,631	199,558	2,330	93,409	21,994
1958	12,085,407	3,708,264	222,994	2,049	86,514	22,654
1959	12,219,626	3,797,528	214,237	1,936	102,367	25,444
Prairies. 1957	3,833,485	941,811	82,195	7,653	3,137	6,735
1958	4,060,531	966,871	90,493	7,478	2,374	7,147
1959	4,017,878	995,354	88,616	6,619	2,146	7,433
B.C. 1957	776,040	436,843	2,882	444	691	3,877
1958	805,643	455,862	3,280	343	791	4,236
1959	839,887	462,040	4,267	410	705	4,276
Totals. 1957	17,306,028	5,386,571	303,371	12,528	99,036	35,117
1958	18,053,883	5,491,428	335,990	11,777	91,321	36,566
1959	18,191,963	5,625,546	325,300	10,526	107,175	40,017

¹ Not included in this table are: whey butter, with a production of 2,248,000 lb. in 1957, 2,137,000 lb. in 1958, and 2,722,000 lb. in 1959; other cheese with 10,083,000 lb., 10,406,000 lb., and 11,393,000 lb., respectively; and concentrated milk products with 540,058,000 lb., 586,317,000 lb., and 584,330,000 lb., respectively.

Poultry and Eggs

Poultry meat and egg production enterprises on Canadian farms have changed significantly in scale of operations and efficiency of production during the past few years. Quality egg production from larger, well-managed flocks and rapidly expanding broiler chicken and turkey output have highlighted the industry. Estimated volume (eviscerated weight) of chicken broilers processed in registered plants rose from 95,000,000 lb. in 1957 and 134,000,000 lb. in 1958 to 153,000,000 lb. in 1959. Turkey broiler meat output through registered plants increased from about 12,000,000 lb. in 1958 to 19,000,000 lb. in 1959. Poultry meat of all kinds (eviscerated weight) produced in 1959 was estimated at 502,763,000 lb. compared with 470,377,000 lb. in 1958: the 1959 figure was made up of 365,198,000 lb. of fowl and chicken meat, 130,614,000 lb. of turkey and the remainder goose and duck. Per capita consumption of poultry meats increased from 27.6 lb. in 1958 to 30.4 lb. in 1959.

Summary of Supply, Distribution and Consumption of Poultry Meat and Eggs in Canada

(Poultry meats on eviscerated weight basis)

Item	1958					
	Total Meat	Fowl and Chicken	Turkey	Goose	Duck	Eggs
	'000 lb.					'000 doz.
Stocks at Jan. 1.....	32,700	20,130	12,137	246	187	13,200
Production ¹	470,377	356,007	107,839	3,060	3,471	449,819
Imports.....	11,727	9,524	562	—	1,641	2,434
Total Supply.....	514,804	385,661	120,538	3,306	5,299	465,453
Exports.....	328	324	4	—	—	19,386
Stocks at Dec. 31.....	44,223	25,736	18,043	224	220	7,890
Domestic disappearance.....	470,253	359,601	102,491	3,082	5,079	438,177
Less used for hatching.....						15,976
Domestic consumption.....	470,253	359,601	102,491	3,082	5,079	422,201
Per capita consumption.....	27.6 lb.	21.1 lb.	6.0 lb.	0.2 lb.	0.3 lb.	24.8 doz.
	1959					
	Total Meat	Fowl and Chicken	Turkey	Goose	Duck	Eggs
	'000 lb.					'000 doz.
Stocks at Jan. 1.....	44,223	25,736	18,043	224	220	7,890
Production ¹	502,763	365,198	130,614	3,170	3,781	460,004
Imports.....	8,233	6,262	438	—	1,533	2,449
Total Supply.....	555,219	397,196	149,095	3,394	5,534	470,343
Exports.....	717	648	69	—	—	29,932
Stocks at Dec. 31.....	24,870	12,783	11,804	129	154	6,030
Domestic disappearance.....	529,632	383,765	137,222	3,265	5,380	434,381
Less used for hatching.....						15,456
Domestic consumption.....	529,632	383,765	137,222	3,265	5,380	418,925
Per capita consumption.....	30.4 lb.	22.0 lb.	7.9 lb.	0.2 lb.	0.3 lb.	24.0 doz.

¹ Production estimates do not include Newfoundland.

Once prized game birds roaming the wilds of North America, turkeys today live a short life and a pampered one. During a brief seven-month life span, the fast-maturing birds consume some hundred pounds of grains and vitamins and have, in recent years, become the leading dollar earner of Canada's poultrymen.





The heavily laden apple-trees of the Annapolis Valley in Nova Scotia provide employment for thousands of pickers and canners each autumn. Apples are marketed whole or processed into dried or canned apple slices and apple juice.

Fruit and Vegetables

Commercial fruit-growing is confined almost exclusively to rather limited areas in Nova Scotia, New Brunswick, southern Quebec and Ontario, and British Columbia. In most of these areas fruit is the principal crop and is of paramount importance to the district.

The apple is the most important of the fruit crops, 17,006,000 bu. with a farm value of \$14,729,000 having been produced in 1958. Average prices ranged from 63 cents a bushel in Nova Scotia to \$1.30 in Quebec. Strawberries and raspberries are grown in commercial quantities in all fruit-growing areas but tender tree fruits are grown only in British Columbia and Ontario. Ontario produces most of the grapes grown in Canada, and apricots and loganberries are exclusive to British Columbia. Blueberries are indigenous to many areas throughout Eastern Canada while cultivated varieties are grown commercially in British Columbia and Nova Scotia.

A marketing system has been developed for distributing fresh fruit from specialized production areas to all parts of the country. Canning and processing plants in the fruit districts provide a valuable outlet for most fruit crops and considerable quantities of apples, strawberries and blueberries are exported.

Although vegetables are grown for home and local use everywhere across Canada and even as far north as the Yukon, the areas of commercial production, as for fruit-growing, are fairly well defined. A wide variety of crops is grown in southern Ontario which is the main producing area, in Quebec particularly in the Montreal district, and in southern British Columbia. A somewhat smaller range is produced in the Maritimes and in the Prairie Provinces. Canning, freezing and processing plants operate in the important producing areas.



Farm Values of Fruits Produced, 1955-1958, with Averages 1950-54

Fruit	Average 1950-54	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000
Apples.....	15,859	10,870	16,048	18,035	14,729
Pears.....	2,277	2,579	2,853	2,201	2,986
Plums and prunes.....	1,127	1,068	896	946	1,194
Peaches.....	4,532	6,125	4,384	6,218	5,404
Apricots.....	251	316	194	523	443
Cherries.....	2,504	3,503	2,076	3,606	3,736
Strawberries.....	6,351	5,910	4,240	3,675	5,012
Raspberries.....	3,066	2,775	2,407	3,008	2,392
Grapes.....	3,366	3,622	3,293	2,832	4,867
Loganberries.....	166	178	53	161	134
Blueberries.....	—	2,688	2,290	1,888	2,365
Totals.....	39,499	39,634	38,734	43,093	43,262

Government and Agriculture

The Federal Government and the provincial governments each maintain a Department or Director of Agriculture which has the general function of giving the utmost aid and guidance to the farmer in almost every field of his operations. The activities of the federal Department include research, promotional and regulatory services, and assistance programs. Much of this work is carried out in co-operation with provincial authorities.

The research work of the Department is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Its broad program of investigation is conducted through ten research institutes, seven of them at Ottawa, nine regional research stations, two regional research laboratories, 27 experimental farms, 21 laboratories, two forest nursery stations and 20 substations located throughout the ten provinces and the Yukon and Northwest Territories. The institutes are engaged in basic research of wide application to agriculture and forest biology: breeding, nutrition and management of animals; plant studies including disease control and breeding of superior varieties; fruit and vegetable processing and storage; soil chemistry and classification; entomology; bacteria of agricultural significance, processing of dairy products; control of destructive insects and noxious weeds; control of insect diseases through biological means; and examination of chemical pesticides. Other units deal with regional problems such as cereal diseases, forest diseases and pests, exploitation of peat bogs, reclamation of marshland, shelter-belt trees, soil erosion, dryland agriculture and the growing of special crops such as tobacco.

Other Departmental services are directed toward the prevention or eradication of livestock diseases, the inspection and grading of agricultural products and the promotion of sound policies for crop and livestock improvement. Safeguarding crops and livestock from diseases or pests that might be imported with shipments from abroad is an important part of this service. Programs for the eradication of bovine tuberculosis and brucellosis and analytical and diagnostic services are provided for domestic and wildlife diseases.

The promotion of high quality seed and purebred livestock is also of great importance. Another type of activity is the enforcement of laws governing the sale of feeds, fertilizers, pesticides and many other products purchased by farmers.

Canada has enacted a number of financial measures to ensure greater stability of the farm economy. Under the Canadian Farm Loan Act, 1927, long-term and short-term mortgages were made available to farmers. From its inception to March 31, 1959, the Board made 54,624 loans, totalling \$168,900,000. The Farm Improvement Loans Act, 1944, provided funds for equipping, improving and developing farms, and from 1945 to the end of 1958, 723,675 loans totalling \$813,500,000 were made.

A new Act, proclaimed July 18, 1959 and known as the Farm Credit Act, replaces the Canadian Farm Loan Act and the assets and responsibilities of the Canadian Farm Loan Board are now assumed by the Farm Credit Corporation, operating under this new Act. Larger loans are now available on a broader basis including a new type of assistance, the supervised loan, designed to enable qualified farmers between the ages of 21 and 45 to set up an economic farm unit.

Another important piece of legislation passed in 1959 was the Crop Insurance Act, which authorizes the Minister of Agriculture to sign separate agreements with provinces wishing to undertake crop insurance and willing to set up and administer the scheme most suitable to their needs.

A number of federal acts assist the marketing of produce. The Agricultural Stabilization Act replaced the Agricultural Prices Support Act in 1958. It provides price support for any designated natural or processed product at the discretion of the Agricultural Stabilization Board, but is mandatory for nine commodities, cattle, hogs, sheep, cheese, butter, eggs, and wheat, oats and barley outside the jurisdiction of the Canadian Wheat Board.

The Agricultural Products Marketing Act provides for the extension of all or any powers exercised by provincial boards established under provincial legislation for the marketing of agricultural products within the province, to permit them to exercise those powers outside the province in interprovincial and export trade.

Where natural hazards cause severe crop loss, farmers may obtain compensation through the Prairie Farm Assistance Act, and prairie farmers who cannot deliver all their grain to market are given temporary financial assistance under the Prairie Grain Producers Interim Financing Act. The Prairie Grain Advance Payments Act permits the Canadian Wheat Board to make interest-free advances to farmers against threshed grain stored elsewhere than in an elevator.

Regulatory Acts which the federal Department of Agriculture administers include: the Destructive Insect and Pest Act; Pest Control Products Act; Animal Contagious Diseases Act; Meat and Canned Foods Act; Canada Seeds Act; Livestock and Livestock Products Act; Livestock Pedigree Act; Fruit, Vegetables and Honey Act; Cold Storage Act; Canada Dairy Products Act; Maple Products Industry Act; Meat Inspection Act; Agricultural Products Standards Act.



Construction on the \$184,000,000 South Saskatchewan River Project began in 1959 following the explosion of 750 lb. of dynamite, triggered by the Prime Minister. This project will involve the largest rolled-earth dam of its kind in Canada, and one of the largest in the world. Rising 210 ft. above the present river floor, it will stretch across the valley for three miles, creating an immense inland lake extending 140 miles upstream. This project, with an irrigation potential of a half million dryland acres, will help to stabilize agriculture in the region.

Irrigation and Land Conservation

The Federal Government, jointly with the respective provinces, has constructed a number of projects concerned with land utilization and water conservation. Under the Prairie Farm Rehabilitation Act of 1935, financial and other assistance has been provided to combat the problems of drought and soil drifting adversely affecting agriculture in the Canadian prairies. Five major irrigation projects, which will assure adequate supplies of water for more than 1,500,000 acres of land, have been or are being constructed in southern Alberta and Saskatchewan.

Financial assistance has also been given to individuals for the construction of 60,000 dugouts, small dams or other water conservation projects on their own farms, as well as for hundreds of community projects. In British Columbia many small irrigation projects have been constructed in the Okanagan and South Thompson valleys where the land is used mainly for the growing of small fruits and vegetables and for dairying. In addition, several major reclamation projects have been undertaken in Manitoba and Saskatchewan where flood problems exist.



The picturesque fishing fleet of Prince Rupert on the west coast of British Columbia. Salmon is the main catch, but there are sizeable landings of herring and halibut and some cod, sole and shellfish are also fished.

Fisheries

Canada's fisheries have played an important role in the economic development of this nation from the very advent of settlement in the 16th century to the present time. In recording Cabot's remarkable voyage of discovery from England to Newfoundland, history books tell of the explorer's astonishment at finding the new found waters literally abounding with fish. Settlement and subsequent development of this part of Canada were largely influenced by the fisheries. Similarly when the father of French Canada, Samuel de Champlain, was charged with the responsibility of settling the new country, the French government stressed that he should devote considerable effort to the development of the fisheries.

It was obvious to far-sighted administrators, even at the outset of settlement, that this new land was richly endowed with a primary resource that would provide a living for settlers. Many of the first inhabitants turned to

fishing for the major source of their livelihood and today the hardy fishermen of Canada's coastal and inland areas still prosecute the fisheries with the same vigour as in earlier times. However, a fisherman of the Elizabethan age would see changes between his methods of operation and those practised today, as well as many differences in the species of commercial importance and in the processing operation.

It is true that in this century of phenomenal industrial growth, the fishing industry has declined in relative importance in the overall economy of the country. Nevertheless, Canada is one of the world's leading fishing nations, with an annual catch of about 2,000,000,000 pounds and a market value which is close to \$200,000,000. Thus, the commercial fishing industry makes a worthwhile contribution to the Canadian economy. However, fisheries administrators and the industry have realized for quite some time that new and improved fishing methods, better processing methods, and greater diversification of the fishing enterprise were necessary if the Canadian fishing industry was to keep pace with that of other nations as well as with other Canadian industries in general. The federal Department of Fisheries and the provincial agencies concerned with fisheries have been active in providing the impetus for development within this industry, which gives direct employment to some 100,000 fishermen and shore workers as well as the thousands of other people in the transportation, marketing, and other fields.

With a view to encouraging development of a modern and efficient fishing fleet for the Atlantic coast region, the Federal Government currently provides financial assistance toward the construction of new fishing vessels of the dragger and long-liner types. The vessels to qualify must be of approved design, certifiable by the Department of Transport and not less than 45 feet in overall length. Generally vessels of up to 65 feet in length have been insured under the program.

The dissemination of information and the exchange of ideas, so vital for the efficient functioning of any industry, are of great importance in the fishing industry. As the fishing operation in Canada is so farflung—from Newfoundland to British Columbia—there is a definite need for the co-ordinating and directing of information and discussions on fisheries matters so that each fishing area may learn from the other and understand each other's problems. An important milestone was reached in 1958 with the establishment of a federal-provincial committee designated to study the common fisheries problems of the five Atlantic provinces. This body, known as the Federal-Provincial Atlantic Fisheries Committee, is made up of the federal deputy minister of Fisheries and the fisheries deputy ministers of Quebec, Prince Edward Island, New Brunswick, Nova Scotia, and Newfoundland.

The committee meets annually to consider proposals and recommendations regarding fisheries matters of joint and common interest to all the Atlantic provinces. It makes recommendations to the respective governments for implementation of programs and projects designed to assist in the development of methods and techniques in catching equipment such as vessels and fishing gear. It assists in the development of shore and plant facilities, techniques and processes by way of technical advice and other assistance. The committee also studies and reports on the economics of the fisheries to ensure that any proposed program of development is based on sound principles.

Although it has been in operation for only a short time, this committee has been very successful in providing a forum for members to exchange information and ideas on fisheries matters of joint interest; moreover, its members have the advice of scientists, management officials and other specialists who report to the committee.

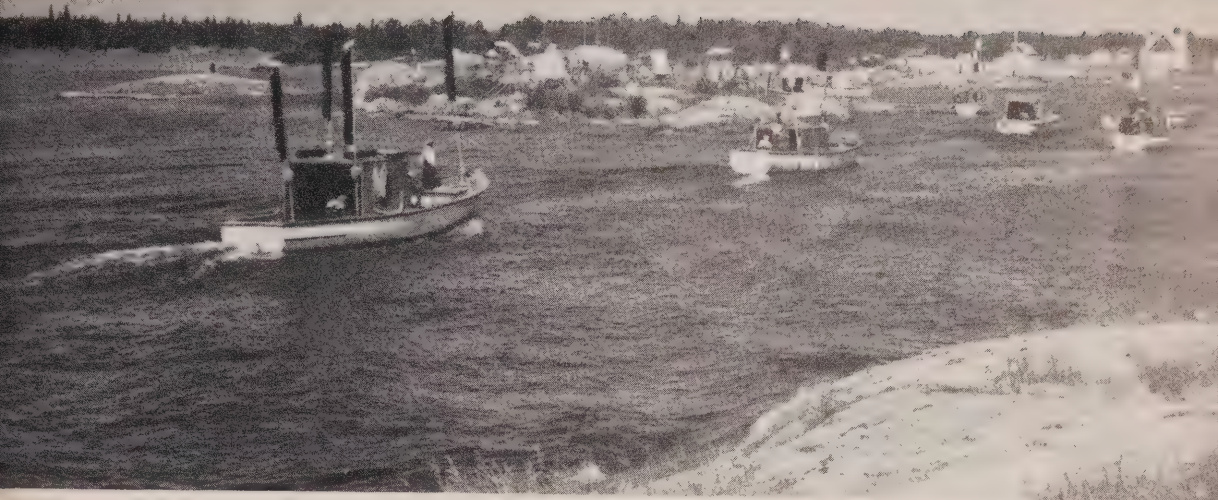
Typical of the efforts to find ways of diversifying the fishing enterprise is the demonstrational work being done with a new multi-purpose boat in Nova Scotia waters. Fisheries administrators believe that this boat will fill the gap between the small 30-foot length boat and the long-liner or small dragger. It is also considered suitable for those fishermen who wish to graduate from a smaller to a larger boat, but who can not afford a long-liner or a dragger. One of the most attractive features of this multi-purpose boat is that it allows a wide range of fishing methods such as Danish seining, long-lining, and dragging. While this new boat is primarily an inshore fishing craft, fisheries officials are confident that there are few limitations as to its range and capacity to operate as compared with larger boats.

In 1951, the province of Newfoundland conducted investigations to determine if Danish seining, a successful fishing method used by European fishermen for many years, could be introduced to Newfoundland waters. Preliminary investigations were encouraging, and Danish seining on a commercial basis began in the province in 1952.

Officials of the Newfoundland government and of the federal Department of Fisheries saw the potential which this method of fishing offered if it was exploited fully by fishermen. In 1953, the Nova Scotia government became interested in Danish seining, and investigations were carried out in the Gulf of St. Lawrence, west of Cape Breton. At the present time, Danish seining has met with success in a number of Nova Scotian fishing communities.



Sardines — really small herring — are caught in seines and packed in cans. Fish processing is Nova Scotia's second largest industry.



Fishing boats returning to harbour at Big Black River, a port on the northeast shore of Lake Winnipeg.

Not only fishing methods are in a state of development, but fish processing is also under study by federal fisheries officials. At its experimental plant in Valleyfield, Newfoundland, the federal Department of Fisheries is attempting to solve some of the problems facing the salt fishing industry of the Atlantic provinces. The plant is fully equipped to carry out investigations on processing operations on a large scale. It is, in effect, a pilot plant where theories developed by fisheries scientists or by industrial research centres are tested at a level comparable to that of commercial production. One of the objectives of the plant is to bring automation to the fish-processing industry at various stages of production.

Federal and provincial officials are devoting much of their efforts to discover ways which will increase the efficiency of the fishing operation, but this is not their only task by any means. Fish is a nutritive and palatable food product, but because it is highly perishable, fishermen and plant workers must observe proper handling practices to ensure its arrival at distant markets in good condition.

In April of 1959, the federal Department of Fisheries greatly expanded its inspection program. All fish processing plants which can meet the qualifications of the Canadian Government Specifications Board are eligible for government inspection and fish products which have passed inspection are clearly marked with either the "Government Inspected" or "Processed under Government Supervision" seals.

Progress in the catching or primary phases of the industry has been paralleled by a number of important new trends in the processing section. One of the most important of these was the introduction, a few years ago, of pre-cooked fish of the groundfish type in the form of "fish sticks"—small, rectangular blocks of cod, haddock, etc., breaded and pre-cooked. This has been followed by several other products in pre-cooked or partially cooked form, such as the popular "fish and chips". Packages such as these are a common sight in frozen food departments of food stores across Canada where they complement the seafood range of fresh, frozen, smoked, and canned products.

Research carried out by the Fisheries Research Board in Prince Edward Island has produced a disease-resistant strain of oysters which has been used to re-stock areas in Nova Scotia and New Brunswick where oyster populations had been practically wiped out by a disease formerly prevalent in Prince Edward Island.

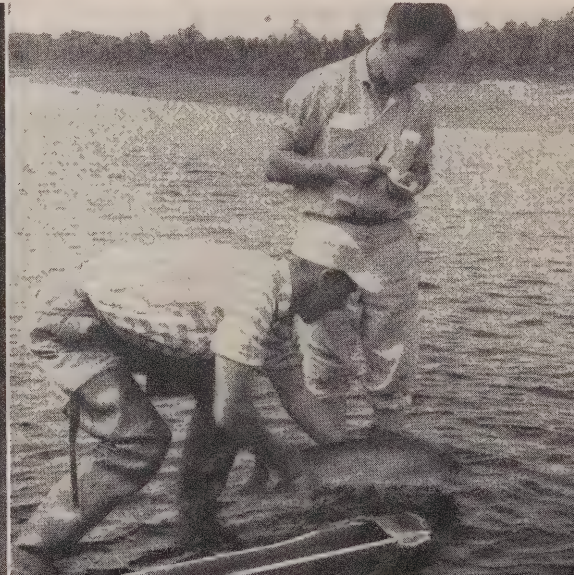


Fisheries Statistics

The value of landings by fishermen in 1958 reached the highest level since statistics including Newfoundland have been compiled. The increased value of the catch is due chiefly to the very heavy runs of salmon on the West Coast where the sockeye catch was the largest in many years. The herring catch in the same area was also substantial but not as great as that of 1956. Lobsters and cod made the greatest contribution to the income of fishermen on the Atlantic Coast.

Cod, haddock, flounders and redfish are in demand for processing into frozen fillets in the form of packaged fillets or in blocks. Herring, on the other hand, are used chiefly in the production of fish meal and oil although considerable quantities of small herring are canned and sold as sardines. Swordfish are sold dressed in the fresh or frozen state and practically all the catch finds an excellent market in the United States. Pacific salmon are used as canned,

(Left) A model of the Hecate Straits at the Fisheries Research Board's Pacific Biological Station at Nanaimo, B.C. In one day four men collect as much information as two oceanographic ships working for one year. (Right) Salmon being released in Great Rattling Brook, Newfoundland, to prevent loss of the run threatened by a hydro development project.



fresh, or frozen fish. Chum, coho and spring salmon are the most satisfactory for consumption as fresh or frozen fish, while pinks and sockeye produce the best canned product. Atlantic salmon, on the other hand, are of only one species and are prized both in Canada and the United States in the fresh or frozen state. Very little East Coast salmon is canned. Atlantic salmon, scallops, and lobsters bring fishermen the highest returns per pound of catch of any salt water species. In 1958 the average price for salmon was 35½ cents, for scallops, 38 cents, while lobsters brought 36 cents per pound. In contrast, the average return for Atlantic cod was 2½ cents per pound and Pacific salmon was 20½ cents per pound.

Quantity and Value of Landings of the Chief Commercial Fish, 1956-58

Kind of Fish	1956		1957		1958 ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb.	\$'000	'000 lb.	\$'000	'000 lb.	\$'000
Atlantic Coast	1,432,533	55,887	1,378,446	50,755	2,251,124	51,154
Cod.....	654,124	16,396	641,834	15,057	530,932	13,228
Haddock.....	155,390	4,862	131,638	4,210	103,366	4,092
Halibut.....	5,422	1,266	7,558	1,751	6,730	1,761
Herring and "Sardines".....	196,200	2,391	222,314	2,515	233,044	2,826
Lobsters.....	51,960	18,023	44,438	14,501	42,950	15,376
Mackerel.....	22,449	802	19,690	724	16,147	737
Redfish.....	59,646	1,274	46,361	1,032	61,368	1,488
Salmon.....	2,650	982	3,033	1,071	3,453	1,226
Swordfish.....	4,612	1,295	5,180	1,341	5,376	1,440
Other.....	280,080	8,596	256,400	8,553	247,758	8,980
Pacific Coast.....	674,975	36,058	490,187	30,021	650,589	51,352
Halibut.....	23,315	5,067	22,542	3,673	23,708	4,902
Herring.....	491,396	7,077	295,376	4,892	405,123	6,712
Salmon.....	113,530	21,356	131,897	18,885	181,318	37,129
Other.....	46,734	2,558	40,372	2,571	40,440	2,609
Inland.....	124,596	13,892	119,589	13,471	114,613	14,024
Pickarel (blue).....	12,020	1,802	6,398	1,151	834	216
Pickarel (yellow).....	20,922	3,161	19,215	3,603	15,475	3,387
Whitefish.....	22,884	3,636	24,444	3,611	24,023	3,496
Other.....	68,770	5,293	69,532	5,106	74,281	6,925
Totals.....	2,232,104	105,837	1,988,222	94,247	2,016,326	116,530

¹ Preliminary.

Landings and Values of All Fishery Products, by Province, 1956-58

Province or Territory	Quantities Landed			Value of Products		
	1956	1957	1958 ¹	1956	1957	1958 ¹
	'000 lb.	'000 lb.	'000 lb.	\$'000	\$'000	\$'000
Newfoundland.....	621,560	575,825	464,024	29,374	26,750	25,746
Prince Edward Island.....	42,202	39,635	39,078	5,246	4,410	5,449
Nova Scotia.....	442,846	438,687	468,462	49,363	45,779	50,812
New Brunswick.....	194,283	192,299	161,073	22,831	22,293	24,623
Quebec.....	140,110	140,845	124,020	7,861	7,929	7,960
Ontario.....	59,710	51,109	47,175	8,920	7,928	8,180
Manitoba.....	30,397	31,571	31,929	6,426	5,929	6,253
Saskatchewan.....	9,441	11,065	12,600	1,766	2,010	2,339
Alberta.....	9,641	10,415	11,482	1,306	1,451	1,450
British Columbia.....	674,975	490,187	650,589	67,725	63,650	97,016
Northwest Territories.....	6,939	6,584	5,894	1,483	1,298	1,235
Totals.....	2,232,104	1,988,222	2,016,326	202,301	189,427	231,063

¹ Preliminary.



One of three 60-ton oxygen steel-making furnaces in the Hamilton plant that pioneered this process in North America in 1954. Oxygen requirements increase with the demand for cold rolled sheet products made from oxygen steel billets.

Industrial Development

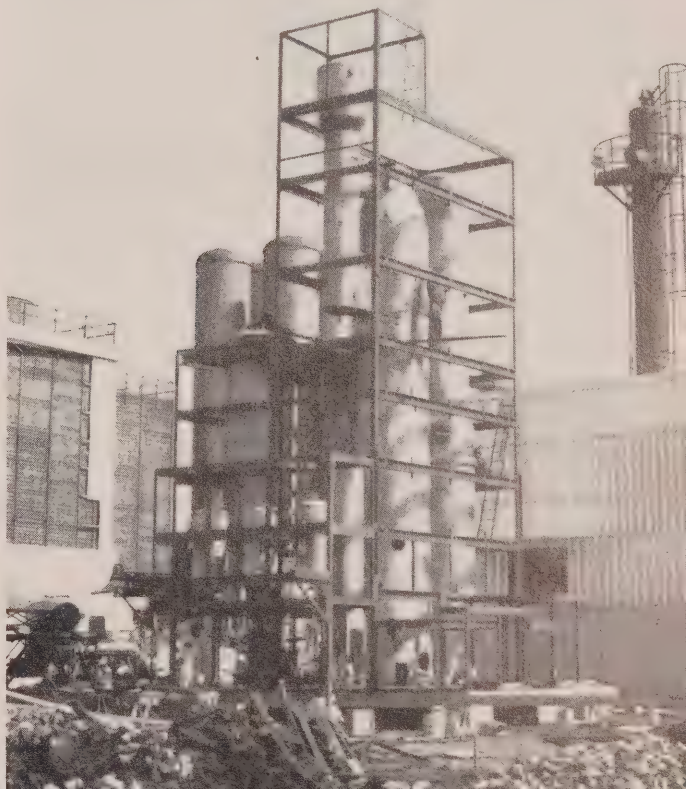
The industrial expansion of Canada since Confederation has been phenomenal. In the past generation alone, Canada has changed from a country producing and exporting mainly primary products to one that is increasingly producing and exporting manufactured products, until today manufactures account for about 30 p.c. of the value of all goods and services produced, and also rank as the leading employer of labour.

Technological advances, new techniques of geological surveying and power generation and transmission have accelerated the rate and range of discovery of the underground wealth of this country and greatly facilitated its profitable exploitation. New fuels in abundance, new means of transport and communication, new structural materials and new industrial processes have drastically modified the whole framework of economic development. These are the factors which underlie the transformation of the country's economic potentialities into a diversified and complex industrial economy.

Canada is no longer on the fringes of industrialization but ranks among the world's most important manufacturing countries. Basic historical developments, such as the opening of the West and the magnitude of requirements of all kinds for World Wars I and II, have been followed by recent discoveries of far-reaching significance. Such events as the discovery of a major oil pool on the Prairies in 1947, the discovery of large-scale deposits of iron and the successful search for uranium have given new dimensions to Canadian thinking and business planning. These are the factors that explain the records of capital expenditures year by year since the end of the War. Yet it is not the mere rate of expansion that is significant. There have been other periods when Canada's population has grown more rapidly and, in many respects, the rate of industrial expansion in the late 1920's was relatively as great as in the post-war years. The real significance of the latter period is that never before had there been an advance on such a broad industrial front.

The second point to be observed is the changing emphasis of Canadian manufacturing activity. By 1949, the period of post-war conversion was passed and Canada had entered a new phase of economic expansion which derived its dynamic from the discovery of new resources and the application of new processes. This meant that even the sharp recession in the United

A "cold box" for a new oxygen-producing unit under erection at the Hamilton plant which is the largest oxygen producer in Canada, with a capacity of 350 tons—equivalent to 8,750,000 cu. ft.—of oxygen per day. The "cold box" will be enclosed in sheet steel casing panels which will then be packed with mineral wool for insulation. The decarbonation tower at the extreme right removes carbon dioxide from processed air.



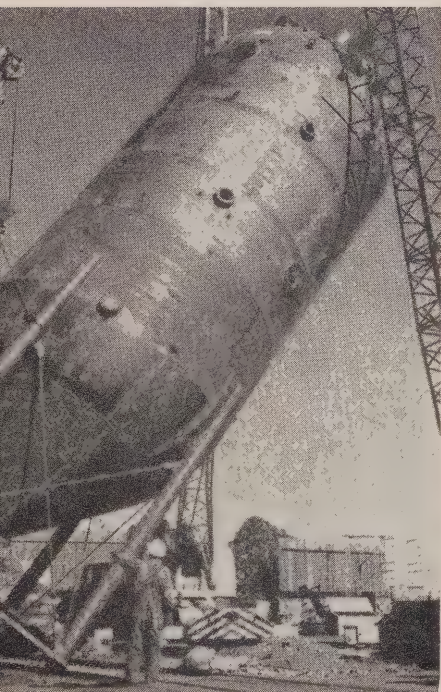
States in the year 1949 failed to have significant effects in Canada. The influence of Korea and the consequent rearmament program gave an added impetus to the expansion of Canadian industry and to the development of Canadian basic resources. Capital expenditures that contributed most to the defence of Canada were given priority. Additional capacity was created to meet requirements of the specialized defence program—aircraft, electronic equipment, ships and guns—many items of which had never before been produced in Canada. Measures such as steel control, credit regulations and deferred depreciation had the desired effect. A shift gradually took place toward the further expansion of basic industrial capacity and away from investment in consumer goods and services.

The stability of current levels of manufacturing is indicated by the fact that such activity is the result of business assessments of resources and market potentialities. Millions of dollars are being invested in oil because the Prairies can produce oil as economically as other great fields on the North American continent. Petrochemical plants are being erected because the raw materials are readily at hand. Kitimat is based on the coincidence of abundant and cheap hydro-power and access to ocean transportation, both of which are essential to the low-cost production of aluminum. The exploitation of the Ungava iron deposits rests on the belief that the steel industry of the North American continent will need the high-grade ores involved in

order to meet continuing peacetime demands. No country is in a more favourable position than Canada to supply uranium for the production of atomic energy.

Of strategic importance, and probably of even greater long-term significance to the Canadian economy, has been the growing world-wide shortage of raw materials; a shortage born of rising levels of employment and income, and accentuated by the course of international events, especially since 1950. These demands have shown few signs of abating and they have led to substantial increases in Canadian primary manufacturing capacity, particularly insofar as the light metals, nickel, chemical fertilizers and the cheaper grades of paper are concerned.

Although the distribution of the gross national product among the main industry sectors in recent decades shows a continuous decrease in the proportional output derived from agriculture in contrast with the upward trend in resources and manufacturing industries, Canada's farms are steadily increasing their unit output and generally lowering unit costs under the impact of mechanization and the adoption of other improvements which are making agriculture progressively more commercial in



A 40-ton, 60,000-gallon sedimentation tank being readied for shipment, completely assembled, to a Calgary oil refinery which is under construction.

In spite of the competition furnished by quick-freezing methods, the quantity of foods preserved in cans increases each year. In 1957, 2,142,567,000 pounds of milk products, vegetables, fruits, soups, meat, fish and other foods, representing a value of \$370,287,000, were canned.



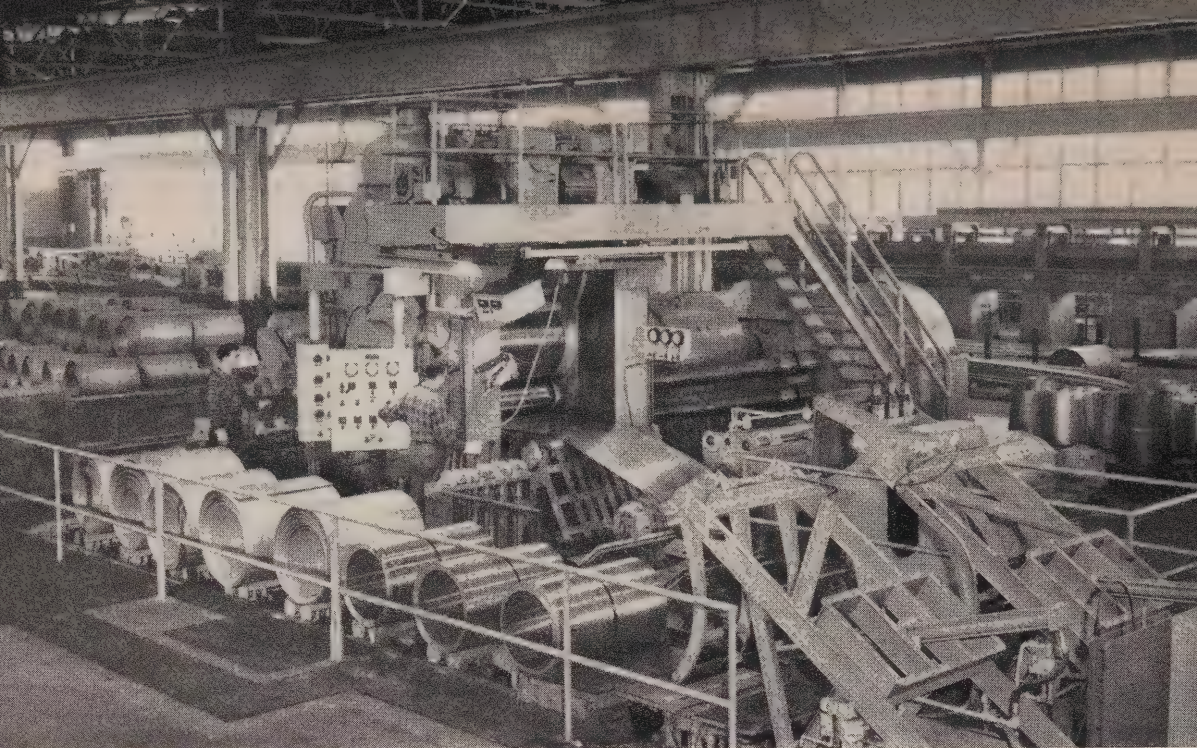
character. Scientific developments and improved utilization and conservation methods are likewise rendering Canada's vast forest potential more productive; during the past decade the net value of production of the wood and paper group of industries rose 81 p.c., from \$808,424,000 in 1947 to \$1,463,768,000 in 1957.

✓ Perhaps the most significant contribution to Canada's post-war growth and potential as an industrial power—presently sixth industrially and fourth in international trade among the nations of the world—is the abundance and variety of energy resources. Thus, to Canada's rich coal resources of some 98,000,000,000 tons and its abundant and widely distributed water-power resources (currently recorded as sufficient to permit a hydro-electric turbine installation of 87,000,000 hp. and having an installed capacity of 22,379,626 hp.) may now be added the vast resources of petroleum and natural gas in its extensive interior plains, estimated in 1958 to comprise proved recoverable reserves of 3,500,000,000 bbl. and 21,000,000,000,000 cu. ft. respectively.

The tremendous activity that has recently taken place in the transporting, refining and marketing of oil and gas energy resources has significantly strengthened the Canadian economy. As a result of several major pipeline operations and the attendant expansion of strategically placed oil refineries, Canada is rapidly becoming self-sufficient in oil and gas, and the economy of the western provinces and Ontario is undergoing important structural changes through the establishment of ancillary industries utilizing these fuels; the thriving petrochemical industries close to the major refining centres or near the low-cost natural gas and oil fields are striking examples.

Canada is, moreover, a leading world source of uranium ores, one of the newest and most spectacular of energy resources. Its 20 uranium mines in production at the end of 1959 with 16 processing plants had attained a uranium ore capacity of 39,700 tons a day. Canada is also among the leaders in atomic research for industrial purposes and has under construction an atomic power station for experimental purposes in the technical field of electric power generation through the use of nuclear fuels.

Despite the fact that less than one-third of Canada's land area has undergone geological reconnaissance mapping and a much smaller area on a scale adequate for mineral exploration, the rich variety, steadily expanding accessibility and abundant wealth of its mineral resources so far brought to light, place Canada among the great mineral-producing nations. A measure of the growth and significance of the Canadian mining industry may be observed in the following tabulation. For a more detailed statement, see p. 316.



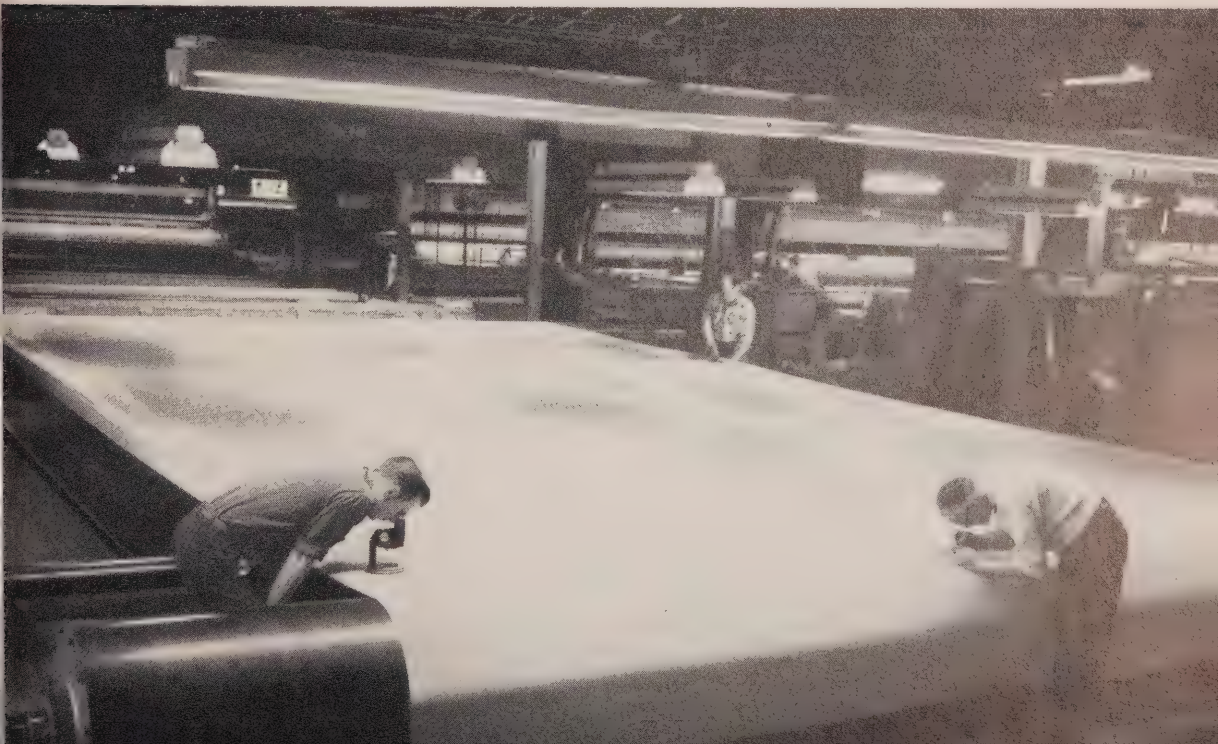
Copper or combinations of copper, zinc, lead, nickel and other metals mined and refined in Canada leave high-speed rolls in sheet form at the rate of 750 feet a minute. This automatic mill, operated by two men, is part of a \$3,000,000 extension to a New Toronto plant.

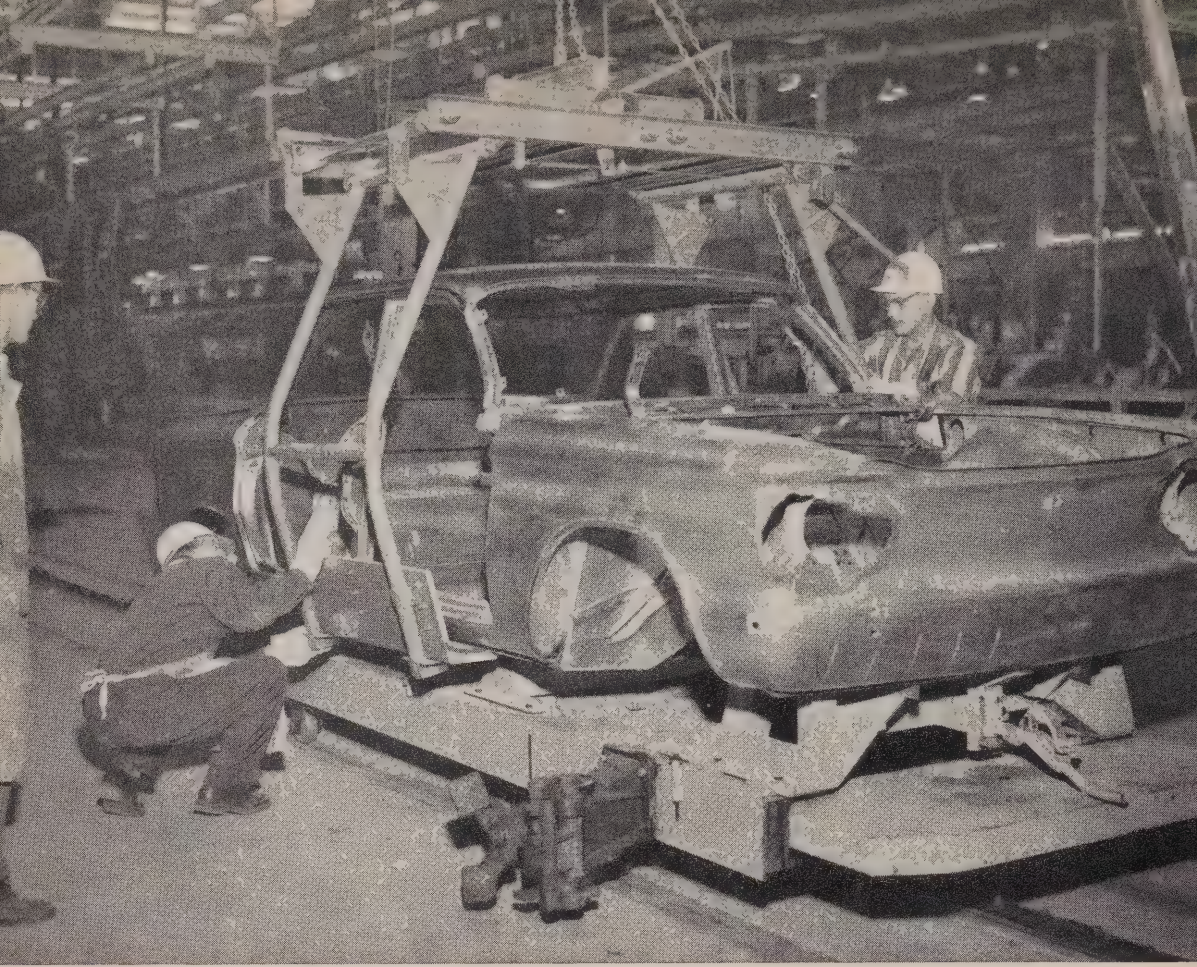
Mineral	Av. 1945-49	1958	1959 (estimate)	1959 as p.c. of 1945-49	Canada- ian Production as p.c. of 1958 World Production	Canada's World Rank 1958
Copper.. '000 tons	230.3	345.1	394.9	171.4	9	4
Nickel.... "	119.5	139.6	185.1	154.9	60	1
Gold.... '000,000 oz. t.	3.3	4.6	4.4	133.3	11	2
Zinc.... '000 tons	244.9	425.1	394.5	161.1	14	1
Iron ore. "	1,923.3	15,726.3	24,477.0	1,272.6	—	6
Lead.... "	167.9	186.7	186.5	111.0	8	4
Uranium '000 lb.	—	26,805.2	30,993.7	—	—	2
Asbestos. '000 tons	595.7	925.3	1,042.2	174.9	46	1
Gypsum. "	2,275.7	3,964.1	5,941.3	261.1	11	3
Petroleum '000 bbl.	11,470.5	165,496.2	184,593.0	1,609.3	3	8
Silver... '000,000 oz. t.	14.3	31.2	32.3	225.9	13	3

That Canada in ten years has more than doubled its mineral production indicates that it is producing many basic minerals vital to its own economy and in short supply in other countries. Furthermore, the fact that these resources are available in a politically and economically sound Canada has attracted a remarkable inflow of investment capital and technical skills from the United States. Increased Canadian and foreign investment in new mines, in oil fields and related industrial projects, and in new transportation facilities has brought about substantial shifts in Canada's economic geography, broadening the distribution and diversification of industry and strengthening the national economy.

With the minor recession which set in about the middle of 1957, some phases of the industrial development moderated as compared with 1956 when construction on some major projects was at its peak, and the stockpiling of strategic minerals by NATO powers was still a significant factor. Rapid recovery in industrial production occurred in 1959 so that the various economic indicators continued to provide additional evidence that Canada is rapidly assuming the status of a great industrial nation. Not only has industrial production regained the lost ground, but in 1959 it surpassed the previous high attained in 1957 by about 6 p.c. Compared with the previous year, industrial production rose 7.7 p.c., the index reaching an all-time high of 164.4. Electric power generated in 1959 was 13.4 p.c. higher, the volume of mineral production 10.4 p.c. higher, while the volume of manufactured products advanced 6.9 p.c. In the manufacturing sector, durable goods rose 8.0 p.c. and non-durable goods 5.9 p.c. There are also other indicators which give evidence of continued growth. Between 1951 and 1959, Canada's population increased by 24.5 p.c., its per capita disposable income from \$1,056 to \$1,368 or by 29.5 p.c., its per capita gross national product from \$1,511 to \$1,983 or by 31.2 p.c., and its volume of industrial production by 41 p.c. The rapid growth that took place during 1955 and 1956 moderated slightly during the two years following. Although the population and per capita disposable income continued to rise, the volume of industrial production declined about 2 p.c. in 1958 as compared with 1957 when industrial production was the highest on record. Canada's foreign trade, likewise a significant measure of the nation's industrial expansion, reached an all-time high level of \$10,569,000,000 in 1956, a point almost retained in 1957. Indicative of the minor decline in the economy in 1958 was the drop of 8 p.c. in imports during the year as compared with 1957. Exports held firm, dropping only from \$4,934,000,000 in 1957 to \$4,894,000,000 in

Every sheet of paper and other pulp products emerging from a primary stock of wood fibre and water begin their drying process on an endless belt of bronze and brass screen known as Fourdrinier wire.





The construction of this new "compact" Canadian-built car differs from the assembly of conventional automobiles in that the floor pan unit forms a complete under-body assembly from front to rear bumpers. This unit travels on a carriage, along the body assembly line.

1958. The general recovery in business activity in 1959 boosted exports to \$5,140,000,000, an increase of 5 p.c., and imports to \$5,509,000,000 or an increase of 9 p.c.

Manufactures

Canada's growth from Confederation to World War I was characterized by geographical expansion, new settlement, and the discovery and exploitation of natural resources. Since that time, it has been a story of rapid achievement of industrial maturity. In 1957 some 1,360,000 employees in some 38,000 manufacturing establishments earned a total of \$4,820,000,000 in salaries and wages, and were responsible for a gross value of factory shipments amounting to \$22,184,000,000. If the cost of materials, fuel and electricity is subtracted from the gross value of production, a net value of \$9,822,000,000 is established. The expansion in manufacturing production which took place since the beginning of the present century is revealed by a comparison with the year 1900 when 14,650 establishments were recorded. These establishments employed 339,000 workers and produced goods that had a gross value of production of \$481,000,000 and a net value of \$215,000,000.

Historical Development. The first phase of Canada's industrial development began about 1860. Rising prosperity until 1873 resulted in the establishment of factories producing goods for local consumption from the abundance of raw materials at hand—flour and gristmill products from the grain, leather boots and shoes from the livestock, and lumber, lath and shingles from the forests. These industries weathered the depressed economic conditions that prevailed during the latter part of the 1870's and a good part of the 1880's, mainly because Canada's high-quality natural resources could be developed at low cost, and also because the expanding railway network and cheap water transport made them increasingly accessible.

The period 1900 to 1920 was characterized by rapid population increase and the opening up of the West. The program of railway construction, the growth of cities and towns, the equipping of western farms and the extension of community facilities in both Eastern and Western Canada gave great impetus to the production of capital goods. World War I brought about a notable acceleration of industrial diversification with particularly striking effects on the refining of non-ferrous metals, the expansion of the steel industry and the shipbuilding and aircraft industries. Following the War, international competition became very keen and Canadian industries experienced some adjustment, particularly in the short though severe recession of 1921. This check was temporary and expansion was resumed up to the crest of 1929, with particular emphasis on pulp and paper, transportation equipment, non-metallic mineral products and chemicals. During this period, certain Canadian industries became competitive with those of other countries in both quality and price. One of the earliest examples was the farm implements industry and another was the pulp and paper industry, which was able to compete successfully in important foreign markets in the 1920's and still remains Canada's leading manufacturing industry.

Glass parts for automobiles have become precision units, shaped to merge with modern styling, tempered to withstand load stresses, treated to provide for heat absorption and visibility control. Here a plastic sheet is laid between two pieces of glass which will eventually be bound together to make a shatterproof windshield.



ELECTRONICS—the glamour industry of the 1950's whose growth greatly outstripped the total growth of manufacturing in the country—is still developing its wondrous products and fulfilling its promise of transforming the world. But the pattern shifts. While changing policies and market saturation have levelled off the output of defence equipment and television units, the field of commercial broadcasting and communications grows apace.

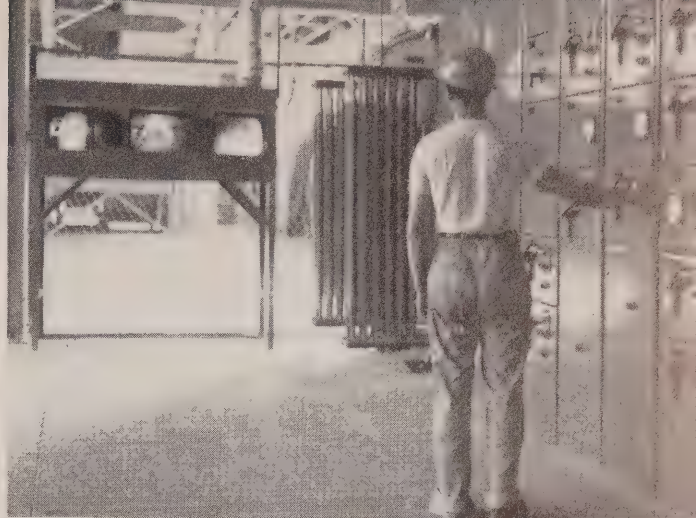


Sleet-melting units being installed in an Ultra-Power TV broadcasting antenna, developed in conjunction with a modular line of TV transmitter designed to meet the peculiar needs of the Canadian broadcaster.

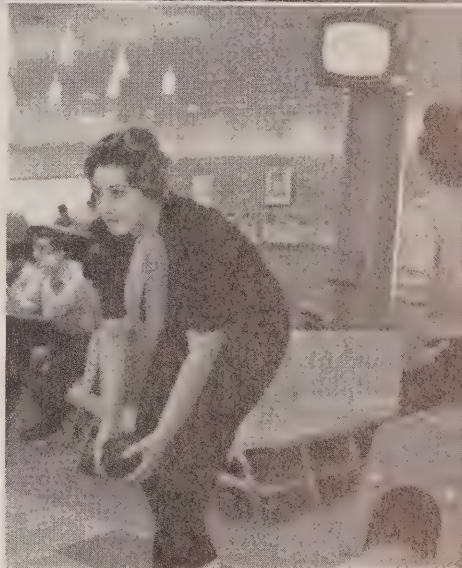
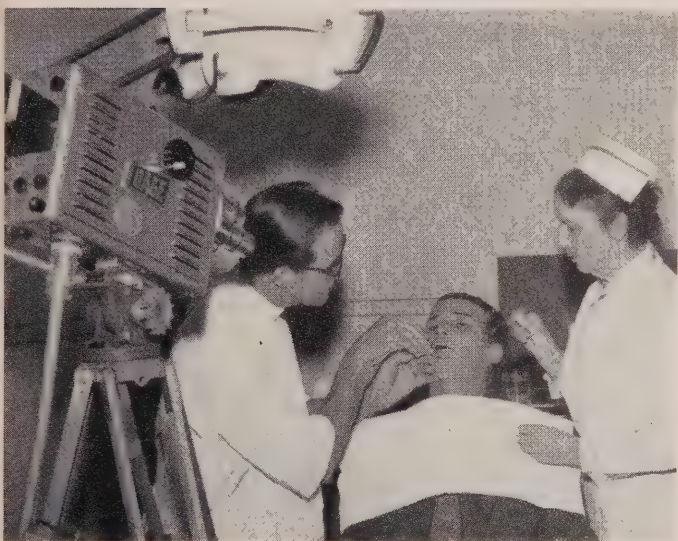
In fact, the development of Canada's secondary manufacturing industries, although perhaps less spectacular and less publicized than its primary manufacturing, has carried the country well along the way to becoming a nation of urban factory and office workers. Secondary manufacturing industries now account for about three-quarters of the output and a slightly higher proportion of employment in the whole manufacturing sector of the economy; they are characterized by a high degree of processing, a major dependence on the domestic market, and a tendency to be located close to the centre of that market. Their growth has contributed greatly to the creation of a more broadly based and much more diversified economy, and they are typically established around the fringes of the larger cities. Driving through the outskirts of Montreal or Toronto, for example, one passes a succession of new plants, large and small, built to produce electronic equipment, television sets, plastics, steel pipe, diesel locomotives, aircraft and aircraft parts and consumer goods of all kinds, few of which were produced in Canada in any quantity before the war.

It is only in the past two decades that manufacturing has attained its position of pre-eminence in the Canadian economy. When war broke out

Cameras watch three vital phases in the unloading of stone consumed in a cement plant.



An extensive and flexible TV network is a major part of the equipment in the University of Toronto's new \$6,000,000 Dentistry Building.



With the aid of a TV monitor, afternoon bowlers keep an eye on their children in an adjoining nursery.

in 1939, Canadian industry responded to a flood of military orders and expanded and diversified at a dramatic rate. Canada, along with the United States, became "the arsenal of the free world". Productive capacity, inadequate to meet the demands placed upon it, underwent intensive expansion, particularly in the heavy industries producing automobiles, aircraft, ships and steel. There was spectacular development in such fields as aluminum, electrical apparatus, toolmaking and chemicals. Fewer imports meant more domestic production of such consumer goods as textiles, shoes, apparel and many other products, and, by the end of the war, well over 1,000,000 workers were employed in manufacturing industries, more than 25 p.c. of the labour force.

The post-war period brought neither a reversal of the outstanding industrial progress of the war years nor any major setback. Reconversion from wartime to peacetime production was completed within two years, and most industries embarked upon programs of modernization and expansion. The outbreak of the Korean war in 1950, Canada's obligations under the NATO treaty, and heavy annual defence expenditures served to stimulate industries



Dehydrated potato rolls off a steam-heated drum. Only one revolution is required to change a film of mashed potato to a dried sheet which is then reduced to flakes and packaged.

in the fast-developing fields of electronics, jet aircraft and engines, and shipbuilding. Full employment, immigration, a high birth rate—all made for strong and sustained consumer demand. Automobiles, radio and television sets, refrigerators and other electrical equipment and telephones became common to the great majority of Canadian homes.

In less than twenty years the number of manufacturing establishments increased by almost 50 p.c. and the total number of workers in industry by about 110 p.c.

Directly, manufacturing supports nearly one-third of the whole population; it contributes significantly to the employment of other Canadians through purchases by manufacturers and their employees of raw materials, foods, farm products and transportation services, to mention only the more important. There are now as many Canadians employed in manufacturing as in the combined industries of farming, forestry, fishing, mining and construction. The value of manufactures—\$9,822,000,000 in 1957—was nearly one-third of the gross national product for that year.

A minor recession began in the fall of 1957 and continued throughout 1958 with the result that, compared with 1957, there was a drop of 4.7 p.c. in the number of employees and 0.9 p.c. in the salaries and wages paid. Selling value of factory shipments was also 2.4 p.c. lower.

The following table shows the long-term growth in Canadian manufacturing. These figures are reasonably comparable but, since they cover so long a period, allowances should be made for certain changes in information collected and in treatment of the data. For instance, in 1952 the collection of data on gross value of production was replaced by value of factory shipments. The former included all goods produced during the year irrespective of whether they were shipped from the factory during that year. The latter includes all goods leaving the plant during the year regardless of when produced. The difference is not great since most goods are shipped during the year in which they are manufactured. Gross values of production or shipments represent more than the actual contribution of the industry to the economy. They give the value of goods leaving the industry and therefore include all the work put into them at earlier stages of production.

Summary Statistics of Manufactures, 1917-58

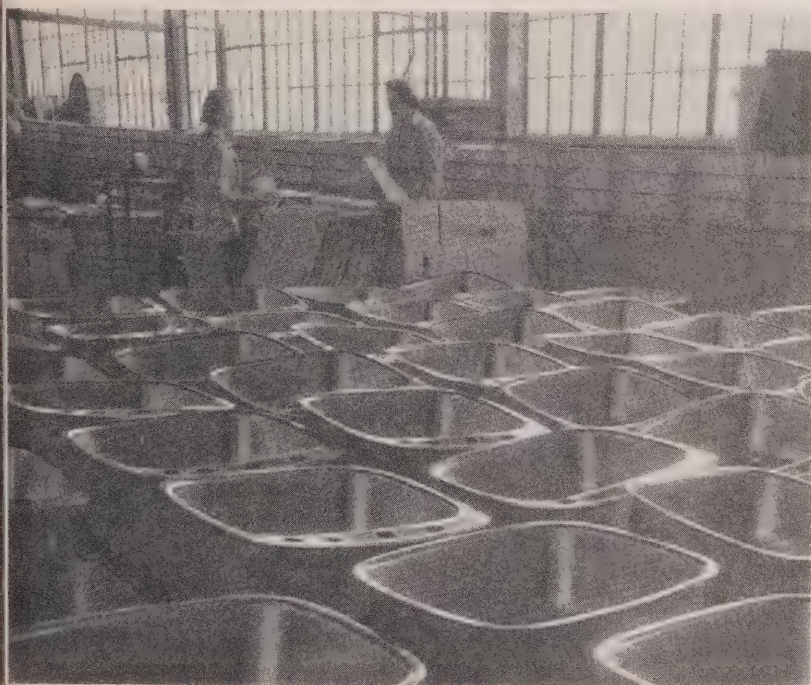
Year	Estab- lish- ments	Employees	Salaries and Wages	Cost of Materials	Net Value Added by Manu- facture ¹	Gross Value of Products ²
	No.	No.	\$'000	\$'000	\$'000	\$'000
1917.....	21,845	606,523	497,802	1,539,679	1,281,132	2,820,811
1920.....	22,532	598,893	717,494	2,085,272	1,621,273	3,706,545
1929.....	22,216	666,531 ³	777,291	2,029,671	1,755,387	3,883,446
1933.....	23,780	468,658	436,248	967,789	919,671	1,954,076
1939.....	24,805	658,114	737,811	1,836,159	1,531,052	3,474,784
1940.....	25,513	762,244	920,873	2,449,722	1,942,471	4,529,173
1943.....	27,652	1,241,068	1,987,292	4,690,493	3,816,414	8,732,861
1945.....	29,050	1,119,372	1,845,773	4,473,669	3,564,316	8,250,369
1947.....	32,734	1,131,750	2,085,926	5,534,280	4,292,056	10,081,027
1948.....	33,420	1,155,721	2,409,368	6,632,882	4,938,787	11,875,170
1949 ⁴	35,792	1,171,207	2,591,891	6,843,231	5,330,566	12,479,593
1950.....	35,942	1,183,297	2,771,267	7,538,535	5,942,058	13,817,526
1951.....	37,021	1,258,375	3,276,281	9,074,526	6,940,947	16,392,187
1952.....	37,929	1,288,382	3,637,620	9,146,172	7,443,533	16,982,687
1953.....	38,107	1,327,451	3,957,018	9,380,559	7,993,069	17,785,417
1954.....	38,028	1,267,966	3,896,688	9,241,858	7,902,124	17,554,528
1955.....	38,182	1,298,461	4,142,410	10,338,202	8,753,450	19,513,934
1956.....	37,428	1,353,020	4,570,692	11,721,537	9,605,425	21,636,749
1957.....	37,875	1,359,061	4,819,628	11,900,752	9,822,085	22,183,594
1958.....	36,741	1,289,602	4,802,496	11,821,567	9,792,506	22,163,186

¹ For 1924-51, value added by manufacture is computed by subtracting the cost of fuel, electricity and materials from the gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 to 1958 from the calculated value of production. Figures prior to 1924 are not comparable since statistics for cost of electricity are not available.

² In 1952 gross value of products was replaced by value of factory shipments; see text above.

³ A change in the method of computing the number of wage earners in the years 1925-30 increased the number somewhat over that which the method otherwise used would have given. In 1931 the method in force prior to 1925 was re-adopted.

⁴ Newfoundland included from 1949 but figures for 1949 and 1950 exclude fish processing.



Nickel alloy or stainless steel has long been popular for kitchen sinks and other equipment, and is being used increasingly for exterior building construction, mixing and storage tanks in pharmaceutical houses and highly stressed parts of modern machinery, including aircraft.

The index of the volume of manufacturing production indicates that production continues to rise faster than employment. In 1947 the index was 93.2 compared with an average of 100.0 for the year 1949. In 1957 it was 142.5, an increase of 53 p.c. from 1947. The advance in employment during the same period was but 19 p.c.

Hundreds of new commodities have been added to the list of Canada's manufactures in recent years, and significant changes have been made in the ranking of certain industries. Indicative of the rapid industrialization and changing pattern of Canadian manufacturing production during the past decade is the increasing importance of the industries producing durable goods. Aircraft and parts which did not rank among the leading industries in 1949 advanced to ninth place in 1957; miscellaneous electrical apparatus and supplies from nineteenth to eleventh place; industrial machinery from twenty-sixth to twelfth place; miscellaneous food preparations from twentieth to thirteenth place; primary iron and steel from eighth to sixth place; and petroleum products from fifth to second place. On the other hand, moderate declines were recorded by some of the consumer goods industries. Slaughtering and meat packing dropped from second to fifth place; sawmills from sixth to seventh place; butter and cheese from seventh to eighth place; railway rolling stock from ninth to tenth place; and bread and other bakery products from thirteenth to fourteenth place. The following industries retained the same rank in 1957 as they did in 1949: pulp and paper remained in first position, non-ferrous metal smelting and refining third, motor vehicles fourth and rubber goods fifteenth.

The manufacture of chemical and allied products is a billion and a quarter dollar business, employing 54,570 people in 1,143 different establishments.

The production of pharmaceuticals demands sterile environment and protection for employees; the cosmetic industry stresses accuracy, uniformity and attractiveness.



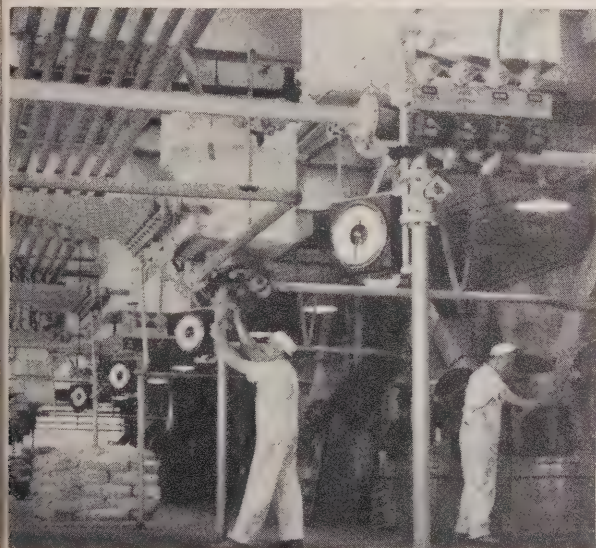
The following table gives principal statistics of the fifteen industries with the largest values of factory shipments in 1958.

Principal Statistics of the Fifteen Leading Industries, 1958

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manu- facture	Selling Value of Factory Shipments
	No.	No.	\$'000	\$'000	\$'000	\$'000
Pulp and paper.....	128	64,084	307,416	597,805	702,951	1,394,679
Petroleum products....	71	14,490	76,644	829,920	487,676	1,368,649 ¹
Non-ferrous metal smelting and refining	25	26,959	131,081	693,797	378,451	1,135,771
Slaughtering and meat packing.....	178	25,712	102,677	852,842	196,229	1,050,461
Motor vehicles.....	15	26,396	129,719	571,501	253,945	847,342
Primary iron and steel..	50	30,261	148,023	250,669	304,924	590,318
Sawmills.....	5,769	47,763	142,700	300,342	236,753	546,299 ¹
Butter and cheese.....	1,222	20,879	69,034	390,475	118,079	522,793
Aircraft and parts.....	75	39,932	182,277	176,539	281,132	462,331 ¹
Miscellaneous electrical apparatus and sup- plies.....	179	25,116	101,161	164,053	175,828	347,837
Miscellaneous food pre- parations.....	299	9,752	34,397	223,012	121,111	345,905
Bread and other bakery products.....	2,637	35,618	106,969	157,268	172,606	340,918
Sheet metal products...	473	19,107	78,135	175,252	154,400	333,265
Printing and publishing	746	30,557	127,741	86,412	238,784	327,687
Machinery, industrial..	379	23,347	95,602	133,424	167,443	311,095
Totals, Fifteen Leading Indus- tries.....	12,246	439,973	1,833,576	5,603,311	3,990,312	9,925,350
Totals, All In- dustries.....	36,741	1,289,602	4,802,496	11,821,567	9,792,506	22,163,186

¹ Reported on a production basis.

The magic of chemistry is invoked in the manufacture of paint as it is in the production of detergents.



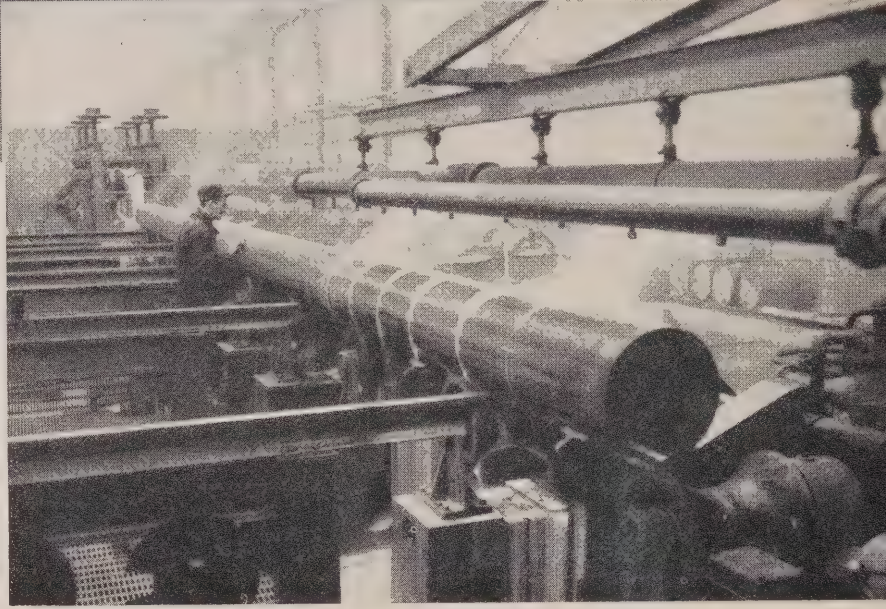


Locomotive wheels from Manitoba.

Steel pipes from the Prairies for oil and gas.



The steel industry has spread to the "agricultural" West where, in 1957, the gross value of agricultural products was \$1,074,-731,000, while the gross value of manufactures was \$1,755,-125,000.



Provincial Distribution

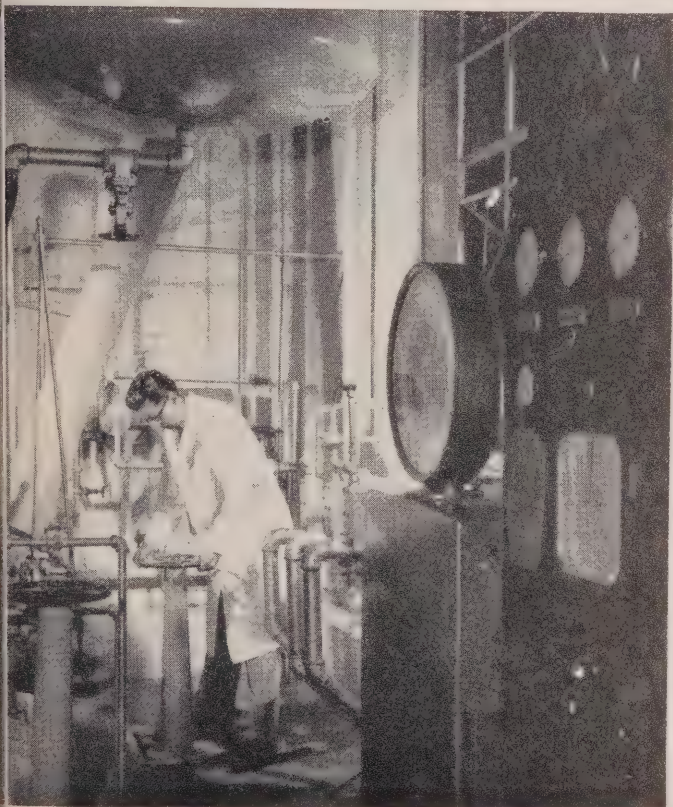
Fully one-half of all Canadian manufacturing output is concentrated in **Ontario**, although the province also has the largest number of occupied farms and is the leading producer of both minerals and furs. ✓ Ontario's industrial development has been largely influenced by its geographic location on the Great Lakes waterways within easy reach of Pennsylvania's coal and Minnesota's iron ore, both indispensable to Ontario's steel mills. The province's excellent—and low cost—hydro-electric power resources, the diversity of raw materials to be had from farm, forest and mine and, not least, the fact that one-third of all Canadians live there, have been hardly less important factors in attracting industry.

Ontario has a greater diversification of manufacturing production than any other province and a number of important industries are carried on there exclusively. By value, the province turns out 90 p.c. or more of Canadian production of motor vehicles and parts, agricultural implements, machine tools, heavy electrical machinery, tobacco processing and packing, miscellaneous non-ferrous metal products, prepared breakfast foods, bicycles, and starch and glucose; between 80 and 90 p.c. of rubber goods, soaps and washing compounds, refrigerators, vacuum cleaners and appliances, artificial abrasives, leather tanneries, wine, automobile accessories, fabric, and typewriter supplies;

and between 70 and 80 p.c. of primary iron and steel, telecommunications equipment, household and office machinery, hardware, tools and cutlery, sporting goods, cordage, rope and twine, toys and games, white metal alloys, carpets, mats and rugs, jewellery and silverware, feed mills and batteries.

Other industries in which more than 50 p.c. of the value of Canadian shipments come from Ontario are: iron castings, fruit and vegetable preparations, heating and cooking apparatus, wool yarn, aluminum products, sheet metal products, industrial machinery, miscellaneous chemical products, printing and bookbinding, brass and copper products, acids, alkalies and salts, aircraft and parts, boxes and bags, paper, confectionery, boilers, tanks and plate work and animal oils. Preliminary statistics for 1958 show 609,300 manufacturing employees in the province producing goods with a selling value at the factory in excess of \$10,686,000,000, virtually half the national total.

Quebec, largest in area of Canada's ten provinces, ranks second only to Ontario in manufacturing production and mineral output, as in population. The province accounts for about 30 p.c. of the value of Canadian manufactured goods, most manufacturing industries being concentrated in the fertile and strategic valley of the St. Lawrence. The most important single industry is pulp and paper. Other industries playing a key roll in the economy of the province include: petroleum products, non-ferrous metal smelting and refining, miscellaneous electrical apparatus and supplies, slaughtering and meat packing, women's factory clothing, railway rolling stock, tobacco, cigars and cigarettes, aircraft and parts, cotton yarn and cloth, etc. In terms of



A technician in this modern paint plant supervises the operation of a resin reactor unit which makes synthetic resins used as components in paint formulas.

number of employees, however, Quebec's leading manufacturing industry is primary textiles, which includes production of cottons, woollens, synthetic fibres and fabrics, hosiery, knitted goods, and the dyeing and finishing of textiles. The fast growing aluminum industry is also a major factor in the province's manufacturing production.

As with Ontario, a high proportion of the total Canadian production of a number of the larger industries is concentrated in Quebec. The highest concentration of any industry is tobacco, cigars and cigarettes, with 91 p.c. of the Canadian total. Other industries in which Quebec predominates with the percentages of the Canadian total are: women's factory clothing 70, cotton yarn and cloth 69, leather footwear 56, men's factory clothing 54 and synthetic textiles 51.

Quebec also leads in a number of the smaller industries. The candle industry, with 95 p.c. of the national total, was the leading industry in this category. Other smaller industries with over 50 p.c. of the total are: men's clothing contractors, oiled and waterproofed clothing, women's clothing contractors, cotton thread, children's clothing, embroidery, pleating and hem-stitching, narrow fabrics, dyeing and finishing of textiles, lasts, trees and shoe findings, oilcloth, linoleum and other coated fabrics, process cheese, fur dressing and dyeing, miscellaneous clothing, leather boot and shoe findings, artificial flowers and feathers, fur goods, miscellaneous textiles, corsets, asbestos products and buttons, buckles and fasteners.

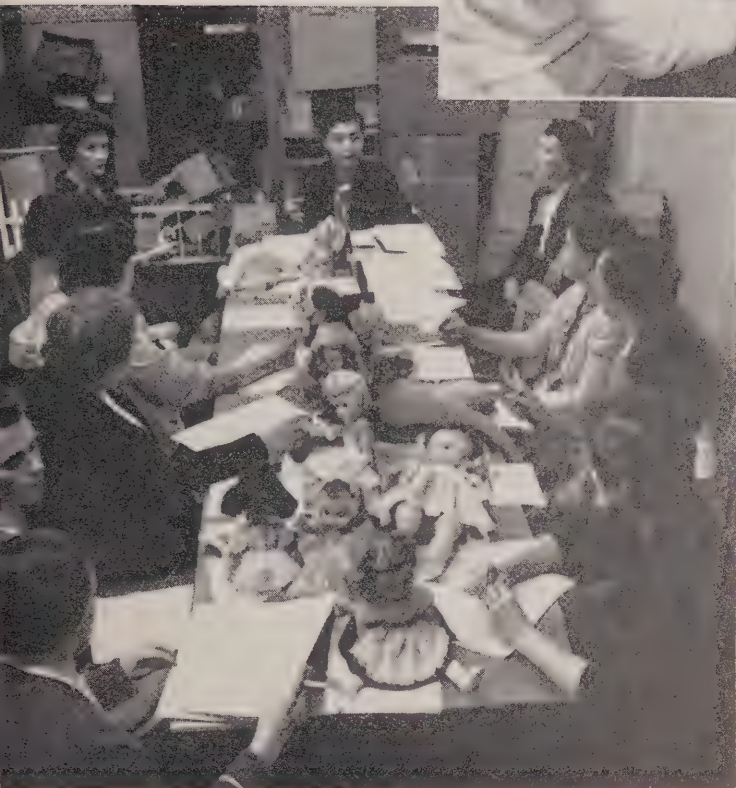
Preliminary figures for 1958 show 430,400 employees in manufacturing and selling value of factory shipments exceeding \$6,535,000,000.

British Columbia, most westerly of Canada's provinces, ranks third in manufacturing production, as in area and population. Rich in raw materials, its forest resources, minerals, fisheries and electric power are the foundation of a rapidly increasing number of manufacturing industries. Chief among these are industries deriving from forest resources—sawmills, pulp and paper, veneers and plywoods, sash, door and planing mills, accounting among them for more than 40 p.c. of British Columbia's manufacturing employment.

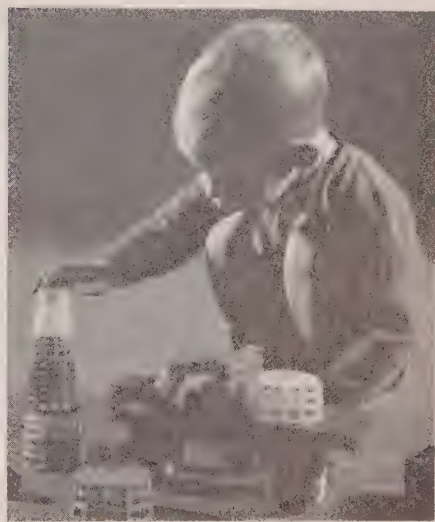


The production of fine papers is an important part of Canada's leading industry—pulp and paper. In 1959, the output of fine papers was 8 p.c. higher than in 1958, reflecting the increasing commercial and industrial growth of Canada.

Canada's burgeoning toy manufacturing industry is now supplying about 70 p.c. of the playthings appearing on the Canadian market. Dolls are traditionally the largest selling item and about 75 p.c. of them are Canadian-made.



A toy-testing committee, composed of parents, has proved a strong influence in the new emphasis being placed on design, play value, price and durability of playthings.



Other leading industries include petroleum products, fish processing, slaughtering and meat packing, shipbuilding, food preparations, fertilizers, and printing and publishing. Preliminary figures for 1958 show 101,300 employees in manufacturing industry; selling value of factory shipments during the year exceeded \$1,800,000,000.

Although Ontario, Quebec and British Columbia account collectively for close to 90 p.c. of total Canadian manufacturing production and employment, the other seven provinces also have shared to some extent in the mushroom-growth of the manufacturing industry since 1939. In Manitoba, New Brunswick, Nova Scotia and Newfoundland, manufacturing ranks as the leading industry, while in Alberta, Saskatchewan and Prince Edward Island it is assuming steadily increasing importance.



These new federal government buildings in Ottawa's southern suburbs are part of the pattern of decentralization of government office buildings. Although residential building is expected to decline, the outlay for construction, during 1960, of industrial, commercial and institutional buildings and engineering projects such as roads and highways, water-works and sewage systems, dams and irrigation projects and electric power installations, is expected to reach an all-time high.

Statistics of Manufactures, by Province, 1958

Province or Territory	Employees	Salaries and Wages	Selling Value of Factory Shipments
	No.	\$'000	\$'000
Newfoundland.....	9,604	29,234	116,979
Prince Edward Island.....	1,632	3,390	26,888
Nova Scotia.....	29,010	86,006	411,929
New Brunswick.....	20,744	61,077	312,022
Quebec.....	429,358	1,476,606	6,754,798
Ontario.....	606,362	2,412,655	10,864,028
Manitoba.....	42,382	142,859	694,051
Saskatchewan.....	12,283	43,228	331,298
Alberta.....	37,860	140,135	848,252
British Columbia.....	100,222	406,628	1,798,961
Yukon and Northwest Territories.....	145	678	3,980
Canada.....	1,289,602	4,802,496	22,163,186

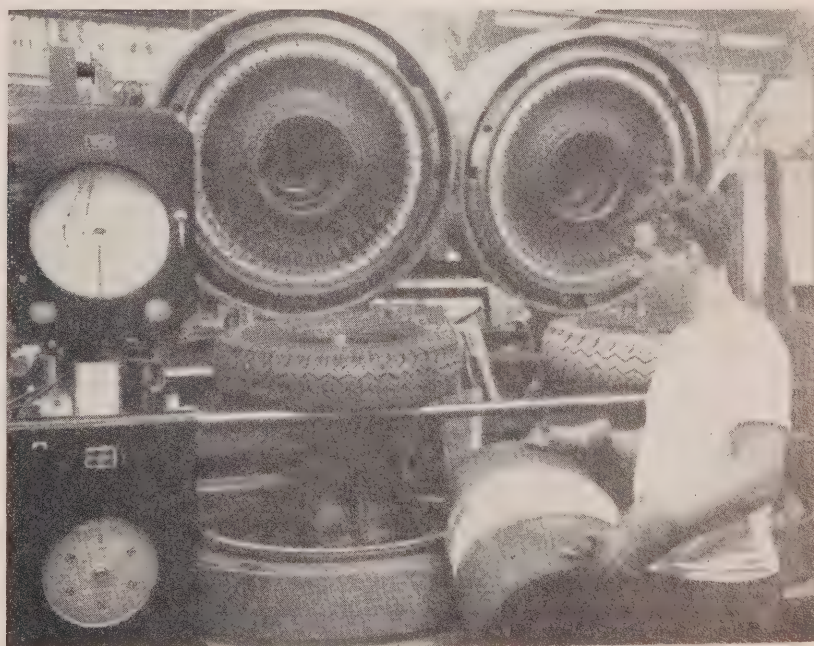
The prosperity of most of the cities and towns of Canada is intimately connected with their manufacturing industries which provide employment for a large proportion of the labour forces. The following table gives the principal statistics for those urban centres in which manufacturers shipped goods to the value of more than \$100,000,000 in 1958.

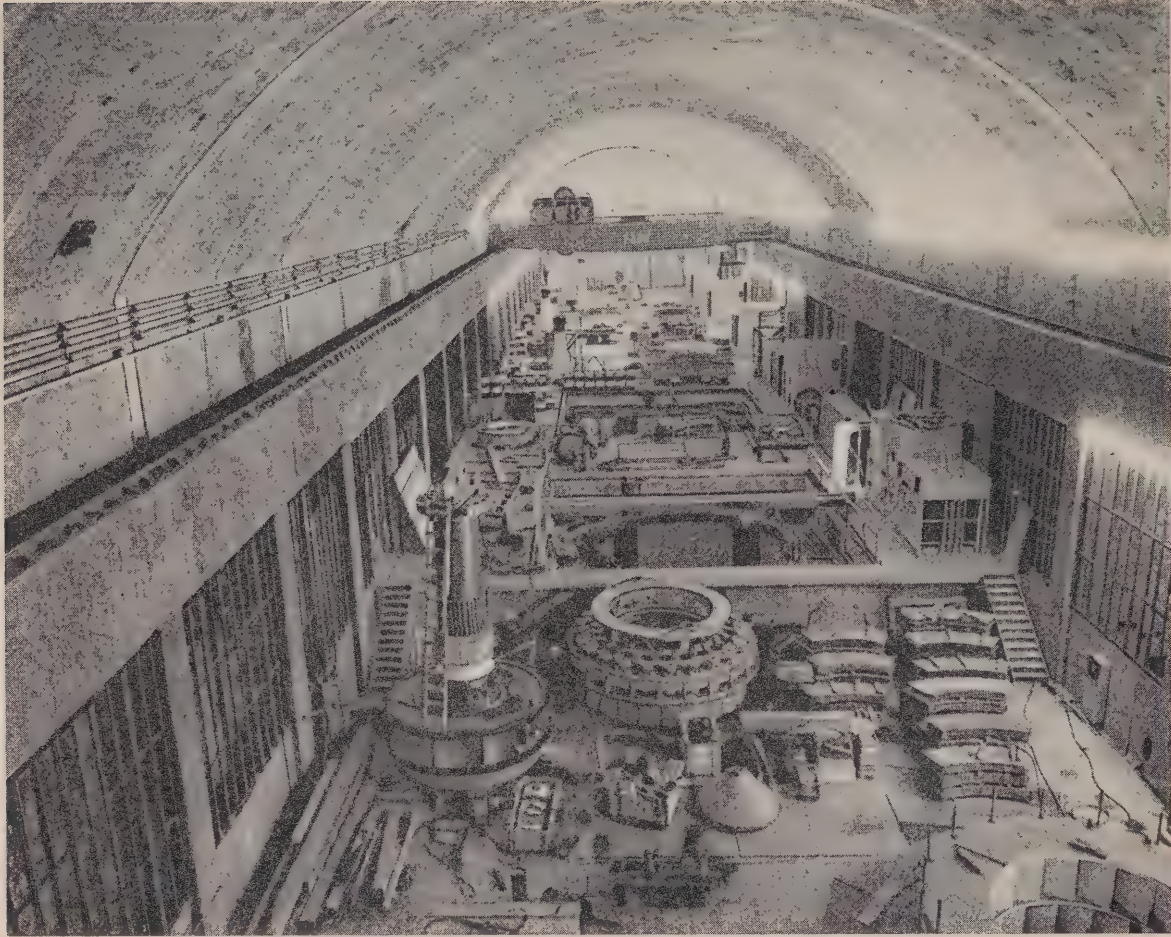
Urban Centres with Value of Factory Shipments of Over \$100,000,000 in 1958

NOTE:—Statistics for urban centres cannot be published when one establishment has 75 p.c. or more, or two establishments have 90 p.c. or more, of the total production.

	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$'000	\$'000	\$'000	\$'000
Montreal, Que.....	4,121	173,582	601,773	21,742	1,189,356	2,266,191
Toronto, Ont.....	3,185	123,789	479,767	20,855	973,581	1,825,714
Hamilton, Ont.....	548	50,269	219,874	24,757	452,298	943,304
Montreal East, Que.....	46	7,219	33,453	22,444	455,033	694,077
Vancouver, B.C.....	1,217	32,765	134,591	6,301	292,447	522,600
Windsor, Ont.....	305	22,249	102,997	5,725	220,362	421,681
Sarnia, Ont.....	51	7,211	36,608	23,915	195,774	362,595
Winnipeg, Man.....	820	25,867	85,034	3,683	169,747	324,232
St. Laurent, Que.....	95	18,021	80,499	2,359	103,420	254,580
Edmonton, Alta.....	408	12,869	46,254	2,344	159,165	251,653
Kitchener, Ont.....	196	15,200	54,427	2,604	122,469	232,151
Calgary, Alta.....	344	10,219	39,664	2,662	139,426	224,998
Quebec, Que.....	426	15,469	49,273	6,728	107,258	215,629
London, Ont.....	281	15,110	54,927	2,821	99,818	212,874
Lachine, Que.....	82	13,025	54,366	2,050	87,060	184,897
New Toronto, Ont.....	43	7,372	33,694	2,349	92,407	177,033
Sault Ste. Marie, Ont....	48	8,514	41,665	7,595	82,396	163,758
St. Boniface, Man.....	95	5,093	18,455	2,311	122,900	163,199
Peterborough, Ont.....	93	9,480	48,463	1,498	73,803	148,137
Brantford, Ont.....	173	10,781	38,733	2,253	72,498	144,356
LaSalle, Que.....	48	5,266	21,210	1,657	67,579	134,228
Ottawa, Ont.....	290	9,968	36,207	2,655	58,484	130,610
Three Rivers, Que.....	89	8,384	28,946	8,236	53,232	123,324
Shawinigan Falls, Que....	47	5,787	24,816	10,526	50,731	120,642
Mont Royal, Que.....	48	5,777	22,815	696	68,495	119,152
New Westminster, B.C....	105	6,115	24,436	1,951	62,919	116,164
Leaside, Ont.....	46	7,586	31,066	975	57,773	106,448
Regina, Sask.....	147	3,505	13,405	2,976	52,475	100,257

Rubber factories are being built in the Canadian West because of the increasing market there. The majority of tires and tubes are in the heaviest classifications due to the increase in heavy machinery.





The 1,000,000 hp. underground development at Chute des Passes on the Peribonka River which flows into Lake St. John, 250 miles north of Quebec City. This tremendous project will feed power to the Aluminum Company of Canada plants in the Lake St. John region.

Electric Power

Canada is extremely well provided with energy potential in many forms—wood products, coal, petroleum, natural gas and falling water, and the more recently recognized minerals which contain a tremendous potential because of their atomic structure. Increasing amounts of energy are being utilized for the production of electric power, in which Canada ranks fourth among the nations of the world. On a per capita basis, Canadians are the second largest consumers of electricity in the world.

The many fast-flowing rivers of Canada with their natural or man-made reservoirs, are the principal source of power and no doubt will retain this leadership for some years to come; being renewable, this source of power is also the most permanent of the country's natural energy resources. In 1959 hydro facilities generated over 90 p.c. of the total electric energy produced in the country.

In some areas of the country, there is a growing tendency towards increased thermal-electric generation which reflects not only a stage of hydro-electric development wherein available undeveloped sites are becoming more remote from established demand areas, but also the benefits of resource conservation which may be derived through the operation of an integrated power system, supplied by both hydro-electric and thermal-electric plants. In the Atlantic Provinces and in Ontario, the fuel supply of thermal-electric plants is mainly coal, while in Western Canada, coal, oil and natural gas are used. Important progress also is being made in the development of power from nuclear sources, although it is uncertain just how soon such energy will compete economically with the more conventional methods of power production.

The following table gives the total power potential of all currently tabulated water power sites in Canada together with the installed capacity of all existing water power developments as of Jan. 1, 1960.

Available and Developed Water Power in Canada, January 1960

Province or Territory	Available Continuous Power at 80 p.c. Efficiency—hp.		Installed Turbine Capacity hp.
	At Ordinary Minimum Flow	At Ordinary Six-Month Flow	
Newfoundland.....	1,608,000	3,264,000	370,135
Prince Edward Island.....	500	3,000	1,660
Nova Scotia.....	30,500	177,000	183,168
New Brunswick.....	123,000	334,000	254,875
Quebec.....	10,896,000	20,445,000	11,315,407
Ontario.....	5,496,000	7,701,000	7,982,151
Manitoba.....	3,492,000	5,798,000	778,900
Saskatchewan.....	550,000	1,120,000	128,835
Alberta.....	911,000	2,453,000	312,595
British Columbia.....	18,200,000*	19,400,000*	3,509,460
Yukon Territory.....	4,678,000*	4,700,000*	38,190
Northwest Territories.....	374,000	808,000	13,050
Canada.....	46,359,000	66,203,000	24,888,426

*The figures marked with an asterisk reflect the effect of possible stream flow regulation based on known storage potentials.

Since it is usual practice to install turbines having a capacity in excess of the power equivalent of the six-month flow, the currently recorded water power resources of Canada will permit the installation of capacity considerably greater than the amount shown. The total installed capacity at the end of 1959 represented less than 30 p.c. of the estimated feasible turbine installation of the country.

To meet the continued demand for electric power to operate mines, mills and factories, to power farm machinery and home appliances, and to light homes, offices and streets, new hydro-electric capacity amounting to more than 2,500,000 hp. and new thermal capacity of nearly 600,000 kw. was added during the year, representing the highest annual increase in electric capacity on record. By far the largest hydro increases were made in Quebec and Ontario where 1,457,800 hp. and 831,300 hp. respectively were added.

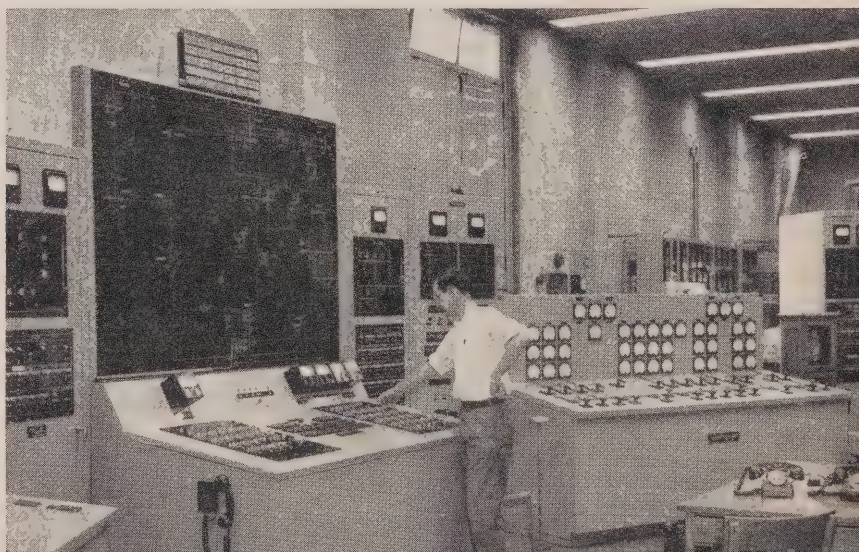
Atlantic Provinces

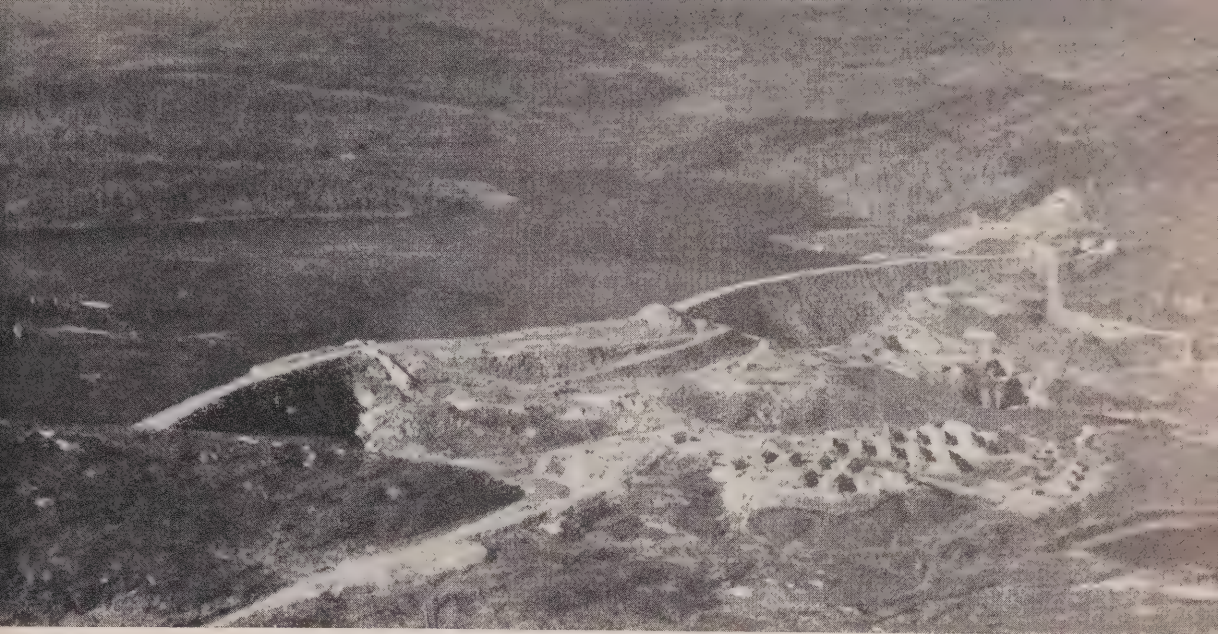
Water power is the main source of electric energy in Newfoundland. Of the total installed capacity of 370,135 hp. in the province, which includes a 12,000-hp. development in Labrador, 269,015 hp. has been installed by utility companies which generate power for sale, while 101,120 hp. has been installed to serve the pulp and paper and the mining industries. The 156,000-hp. station of Bowater Power Company Limited is located on the Humber River and is the largest single development in the province; however, a development with an initial capacity of 77,000 hp. and an ultimate capacity of up to 350,000 hp. is proposed for construction in the Bay D'Espoir area. During 1959, a 1,200-hp. hydro-electric development was placed in service on New Chelsea Brook and a 20,000-kw. thermal electric unit was added at St. John's. One of Canada's largest single sources of potential power is located on the Hamilton River in Labrador where the British Newfoundland Corporation Limited anticipates an ultimate development of perhaps 4,000,000 hp. in the Grand Falls area; three smaller subsidiary projects can be utilized prior to development of the main project and, in this regard, a subsidiary of the Company proposes an initial development of 50,000 hp. on the Unknown River at Scott Falls, with ultimate development at this site expected to reach 300,000 hp.

Prince Edward Island possesses no large streams and consequently most of the electric power generated is produced by thermal stations. Although no new capacity was added in 1959, construction was begun for the addition of a 10,000-kw. unit at the steam plant in Charlottetown.

Nova Scotia's economic water power sites have been developed to a large degree; nevertheless, the greater part of the electric power is generated by thermal developments. The Mersey River provides the principal source of hydro-electric power and contains six developments with a total installed capacity of 57,240 hp. At the end of 1959, installed hydro-electric capacity in the province totalled 183,168 hp. of which 168,375 hp. was installed by utility companies which generate power for sale and the remainder by industrial companies which generate power mainly for their own use. While no new additions were completed during 1959 in the hydro-electric field, two new developments of 8,000 hp. and 12,000 hp. are expected to be completed in

The control room of the 134,000 hp. thermal generating plant in Halifax. One boiler consumes 21 tons of coal and converts 225 tons of water into steam per hour.





Two retaining dams of 2,200 and 1,305 feet in length and 200 feet high at Lac Casse provide a reservoir for two hydro-electric power plants of the Bersimis project capable of generating 2,100,000 hp.

1960 on the Sissiboo River and a third development of 10,800 hp. is proposed for installation by 1962 on that river. A 7,500-hp. development is under construction for operation in 1961 on the Lequille River and a 7,500-hp. development is proposed for completion in 1962 on the Nictaux River. In the thermal electric field, new steam turbine units, with generating capacities of 45,000 kw. and 16,000 kw., were added at Halifax and Sydney, respectively, while a 20,000-kw. unit was under construction for completion in 1960 at Trenton.

New Brunswick's present hydro-electric development represents about half of the province's feasible turbine installation, but the greater part of the electric output is generated by thermal plants. The largest hydro-electric installations in the province are on the Saint John River and consist of the 90,000-hp. Beechwood development and the 80,000-hp. Grand Falls development. The potential of this river may exceed 450,000 hp. Ownership of the Grand Falls development, formerly vested in the Gatineau Power Company, was acquired in 1959 by the New Brunswick Electric Power Commission. In 1959, a 500-hp. unit was added to the Milltown hydro-electric development on the St. Croix River and work was under way for the installation of one 50,000-kw. unit at the new East Saint John steam plant.

Quebec

Quebec is the richest of the provinces in available water power resources and ranks highest in developed water power, its total installations of 11,315,407 hp. at the end of 1959 being about 45 p.c. of the total for Canada. New capacity amounting to 1,457,800 hp. was completed during 1959, the highest among the provinces. Vast power resources are available on the southward flowing tributaries of the St. Lawrence River and Gulf, where a capacity of over 9,000,000 hp. is now installed in the province and where additional capacity under construction totals 2,090,700 hp., inclusive of 442,200 hp. which is being installed on the main stem of the St. Lawrence River.

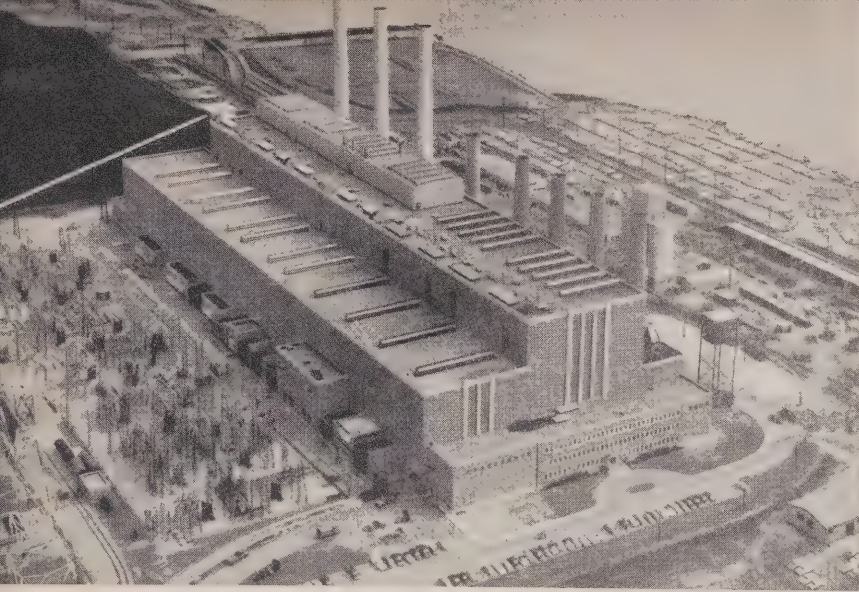
Most of the developed sites in Quebec are owned by private corporations but the provincial government, through its Quebec Hydro-Electric Commission, is the major producer in the hydro-electric field. The largest single hydro-electric station in Canada is the Commission's Beauharnois development on the St. Lawrence River about 30 miles upstream from Montreal; during 1959, new capacity totalling 294,800 hp. was added at this site, raising the installed capacity to 1,718,800 hp. With the completion of this development in 1961, the powerhouse will have a total rated capacity of 2,234,700 hp. The Commission's Bersimis II development, located on the Bersimis River, began initial operation in 1959 when three units, each rated at 171,000 hp., were placed in operation. This development is scheduled for completion in 1960 at which time it will have a total capacity of 855,000 hp. in five units. The Bersimis I development, with a total plant capacity of 1,200,000 hp., was completed in 1958. Four other Commission developments totalling 354,400 hp. are located on the St. Lawrence and Ottawa Rivers. In 1959, construction was begun by the Commission for the installation of 840,000 hp. in 14 units on the Ottawa River at Carillon, some 50 miles from Montreal.

The Aluminum Company of Canada ranks second in the amount of installed hydro-electric capacity in the province. In 1959 new capacity, totalling 600,000 hp. in three units, was installed by the Company at Chute des Passes on the Peribonka River. Additional capacity, totalling 400,000 hp. in two units, is scheduled for completion at this site in 1960, at which time the Company's hydro-electric facilities will consist of five developments totalling 3,040,000 hp. on the Peribonka and Saguenay Rivers. The Shawinigan Water and Power Company, which supplies power for the area between Montreal and Quebec and southward across the St. Lawrence River, has seven developments totalling 1,753,500 hp. on the St. Maurice River and two smaller developments totalling 26,200 hp. on the Batiscan and Ste. Anne de la Pérade Rivers.

Many other power sites throughout the province have been developed and others are under construction to supply the growing requirements of metallurgical, forest products and other industries and for general public needs. In 1959, construction of a 50,000-hp. development was completed on the Lièvre River and a 66,000-hp. development is expected to be completed in 1960 on the Hart Jaune River in the headwaters of the Manicouagan River. Construction of transmission facilities have reached the point where practically all power-producing plants of the province are interconnected. Capacity of thermal-electric stations in Quebec is only about 60,000 kw.

Ontario

Ontario ranks third among the provinces in total available water power resources and second in the amount of installed hydro-electric capacity. New capacity amounting to 831,300 hp. was completed in 1959, nearly all of which was installed by the Hydro-Electric Power Commission of Ontario. The Commission, Canada's largest power-producing and distributing agency, owns and operates 69 hydro-electric developments with a total turbine capacity of over 7,000,000 hp. and two thermal electric plants with a total generating capacity of more than 700,000 kw. The Commission's transmission network covers a large part of the province and is interconnected



The Richard L. Hearn Station in Toronto, the largest thermal plant in Canada. Its capacity will be topped by a new plant now under construction.

with systems in Quebec, New York and Michigan States and in southern Manitoba.

The greatest concentrations of water power resources in Ontario are located on the Niagara and St. Lawrence Rivers. At Ontario's largest development, which includes Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2 and the associated Pumping-Generating station, construction was completed in 1958, bringing to 2,521,000 hp. the total rated capacity at the three stations. These and five other stations totalling about 675,000 hp. obtain their water from the Niagara River and the Welland Canal. Following five years of extensive construction, the Canadian portion of the St. Lawrence Power Project, amounting to 1,200,000 hp., was completed in 1959 with the addition of the remaining nine units of 75,000 hp. each. This marked the completion of a great power project which involved the Hydro-Electric Power Commission of Ontario, the Power Authority of the State of New York and, through the related seaway development, the federal authorities of both Canada and the United States.

Many moderate-sized generating plants are in operation in the Ottawa River basin, in the Georgian Bay region, in northern Ontario and in the northwestern part of the province. In 1959, the Commission completed the installation of a 60,000-hp. development on the Kaministiquia River at Silver Falls in northwestern Ontario. The Commission also made progress in northern Ontario with the completion of the fifth unit of 60,000 hp. at Abitibi Canyon on the Abitibi River. Installed capacity in the northern area will be further increased in 1961 when the installation of 53,000 hp. in two units is expected to be completed on the Mississagi River at Red Rock Falls and initial operation is expected at the Otter Rapids development on the Abitibi River, where four 60,000-hp. units are to be installed with minimum provision being made for the addition of four more units. In the Lake Superior drainage basin, a 30,300-hp. development was completed at Hollingsworth Falls on the Michipicoten River by the Great Lakes Power Company.

With the completion of development of the province's major water power sites, expanding power requirements in the province are becoming increasingly dependent upon thermal-electric generation. At the Richard L. Hearn

Generating Station, the Commission added the first of four additional steam-turbines, each with a capacity of 268,000 hp. The remaining three units are scheduled for operation in 1960. Construction was continued at the Commission's two new thermal-electric plants, one located near Toronto and the other at Fort William. The new plant near Toronto will consist initially of four 402,000-hp. units which are scheduled for operation at intervals between 1961 and 1964. Plans at present provide for a total installation of 2.4 million hp. at this station. The plant at Fort William is expected to commence initial operation in 1961 with the completion of a 134,000 hp. unit; however, if required, the site will permit the construction of a generating station with a turbine capacity of 1,340,000 hp.

The Commission, in conjunction with Atomic Energy of Canada Limited, is constructing a 26,800-hp. Nuclear Power Demonstration plant near Chalk River. The project is scheduled for completion in 1961. Design work was being carried out during 1959 for the construction of a 268,000-hp. nuclear-electric generator station to be located at a site between Kincardine and Port Elgin, on Lake Huron. The latter station will be built by Atomic Energy of Canada Limited and, when it has been demonstrated to be a satisfactory source of power, it is proposed that the Commission will purchase the station at a price which will permit the production of energy at costs competitive with those of alternative energy sources.

Prairie Provinces

Of the three Prairie Provinces, Manitoba is the most abundantly endowed with water power resources, having large potentials on the Churchill, Nelson and Saskatchewan Rivers. Most of its hydro-electric installations are located on the Winnipeg River where the development of all available power sites has been completed. Power from this river is supplied to the City of Winnipeg, to adjacent municipalities and to the transmission network of the Manitoba Power Commission which serves consumers in suburban Winnipeg and rural Manitoba. On the Nelson River at Grand Rapids, the Manitoba Hydro-Electric Board continued construction for the installation in 1960 of five units of 42,000 hp. each, with provision for a sixth similar unit. The power generated

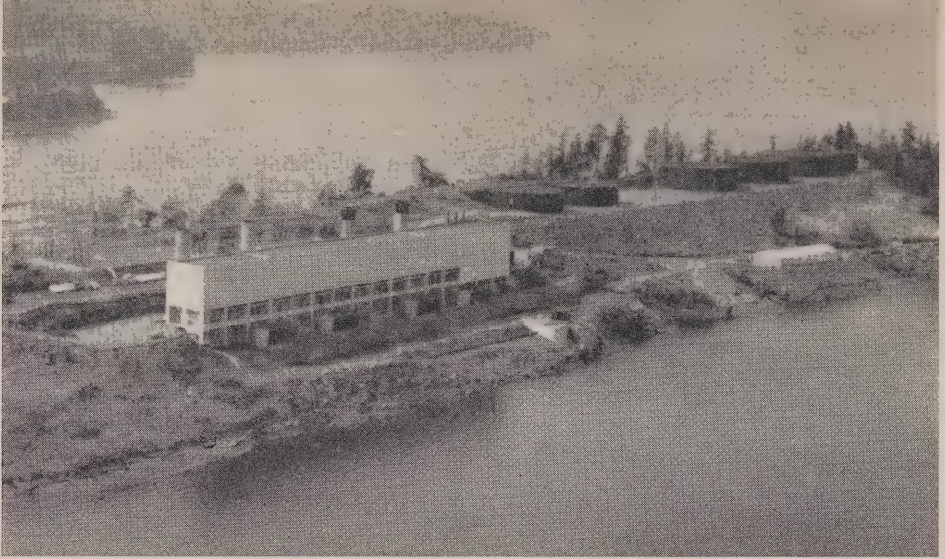


An artesian well tests the flow of water in the Saskatchewan River at the site of the 275,000 hp. Squaw Rapids power development near Nipawin, Sask. to be completed in 1964.

will be supplied to the mining development of the International Nickel Company at Moak, Mystery and Thompson Lakes. In southern Manitoba, new load requirements are being met by the installation of thermal-electric plants and the Manitoba Hydro-Electric Board was proceeding with construction of a new 132,000-kw. plant at Selkirk, with completion scheduled for 1960. A similar plant began service in 1958 at Brandon.

In Saskatchewan, the construction of hydro-electric developments has been confined to the mining areas in the northern part of the province where power resources are abundant. An additional 19,000-hp. unit was added in 1959 at the Churchill River Power Company's development on the Churchill River. However, under the agreement between the Federal Government and the Saskatchewan Government, the Prairie Farm Rehabilitation Administration, Department of Agriculture, Canada, commenced construction in 1958 of the main earth fill dam for the South Saskatchewan River Project. Although the works of this project are primarily for irrigation purposes, hydro-electric facilities totalling about 180,000 hp. will be incorporated by Saskatchewan at the dam. The transmission network of the Saskatchewan Power Corporation, which serves the more settled areas in the southern part of the province, is presently supplied by thermal-electric plants. During 1959, the Corporation's thermal-electric generating capacity was increased to about 454,000 kw. by the installation of a 66,000-kw. unit at its Queen Elizabeth plant and a similar unit at the new Boundary Dam Generating Station. At the latter plant, another unit of the same capacity was under construction at the end of the year.

Alberta's major hydro-electric installations, from which Calgary Power Ltd. serves a large part of the southern portion of the province, are located on the Bow River and its tributaries. Other reserves of water power are available, most of which are in the far northern areas, remote from centres of population. As a consequence, the increasing demand for power in southern Alberta has been met by thermal-electric plants for which economic sources of fuel are in abundant supply. However, hydro-electric construction was resumed in 1959 for the addition, late in 1960, of 62,000 hp. at the Spray plant and 40,000 hp. at the Rundle plant, both located in the upper part of the Bow River basin. Also, construction was begun of a new hydro-electric development on the Brazeau River at Big Bend, about 15 miles upstream from its confluence with the North Saskatchewan River. Initially, one unit of 200,000 hp. will be installed with the addition of up to three other units of similar capacity being dependent upon load demand, available water supply and other factors. The Company also was making preliminary investigations for a hydro-electric development at Brazeau Forks on North Saskatchewan River below its confluence with the Brazeau River. In the thermal-electric field, total installed generating capacity in Alberta amounted to about 540,000 kw. at the end of 1959. During the year, a new 30,000-kw. gas turbine unit was added at Edmonton, while diesel units of 500 kw. and 510 kw. were installed at Lac La Biche and Swan Hills, respectively. Calgary Power Ltd. announced that it proposed to begin installation in 1960 of a 150,000-kw. unit as an addition to its Wabamun steam plant, with operation of the new unit scheduled for late in 1962.



This 100,000 hp. power plant near Chemainus on Vancouver Island, B.C., is one of three major thermal plants recently completed, utilizing the great supplies of natural gas and oil newly available on the West Coast.

British Columbia

The British Columbia Electric Company Limited, with a total installed capacity of 1,193,835 hp. in 15 developments, is the major hydro-electric producer and distributor in the province. Its Bridge River system, utilizing the waters of Bridge River and Seton Creek, is in the final stages of construction; during 1959, two units of 82,000 hp. each were installed at the Bridge River No. 2 development. Upon completion in 1960, the system will be capable of an output of 692,500 hp. in four plants. The British Columbia Power Commission, with a total installed capacity of 412,800 hp. in eight plants is also an important producer and distributor. In 1959, the Commission completed its 35,000 hp. Ash River development on Vancouver Island.

Large hydro-electric capacities have been installed in the province by companies concerned with the mining, refining and wood products industries. Foremost of these is the 1,050,000-hp. Kemano development of the Aluminum Company of Canada Limited,—the largest single development in British Columbia. Similarly important is the 569,000 hp. in five developments installed by the Consolidated Mining and Smelting Company for use in its mining, metal processing, chemical and fertilizer production operations. In the wood products industry, the Powell River Company has a total installed capacity of 100,960 hp. in two developments.

Installation of thermal-electric facilities by the British Columbia Electric Company Limited and by the British Columbia Power Commission has accelerated during the past two years. During 1959, the British Columbia Electric Company Limited completed the installation of 100,000 kw. at its Port Mann gas turbine plant and continued construction of a large steam plant at Ioco, on Burrard Inlet, which ultimately will produce 1,266,000 hp. The Commission installed two 21,760-kw. generator units in 1959 at its Georgia Generating Station on Vancouver Island and added a number of new diesel units totalling 6,300 kw. at various locations in the central part of the province.

Yukon and Northwest Territories

Substantial water power resources in the Yukon Territory are located on the Yukon River and its tributaries; in the Northwest Territories more than half the resources are located on rivers flowing into Great Slave Lake. On the Snare River in the Northwest Territories, the Northern Canada Power Commission began construction in 1959 of a hydro-electric development at Snare Falls, about 10 miles downstream from the existing Snare Rapids plant. In the thermal-electric field, the Commission installed a 1,000-kw. diesel unit for stand-by use at Yellowknife, a 100-kw. diesel unit at Fort Simpson and a 600-kw. steam turbine at the town of Inuvik. The Commission undertook to operate the new 1,000-kw. diesel plant of the Department of Transport at Frobisher Bay. The Yukon Electrical Company installed a 500-kw. diesel plant at Watson Lake and increased the capacity of the diesel plant at Haines Junction from 150 kw. to 600 kw.

Electric Power Statistics

The total electric energy generated in Canada in 1958 amounted to 97,466,822,000 kwh. This figure includes energy generated by publicly or privately owned utilities and energy generated by industrial establishments, mainly for use in their own plants. Of the total, 93 p.c. was produced from water power and the remainder was generated thermally; 4,074,513,000 kwh. were exported to the United States.

Electric utilities provide much of the power for industry, but many large industrial establishments generate their own requirements. In 1957 manufacturing industries purchased 30,728,752,000 kwh. but generated 17,329,485,000 kwh. for their own use. Of this amount, 4,350,799,000 kwh. were generated by pulp and paper industries and 10,932,963,000 kwh. by smelters and refineries. The primary mining industry purchased 3,775,576,000 kwh. from electric utilities but generated 575,309,000 kwh.

In 1958 there were 4,188,946 domestic, including rural, customers in Canada compared with 1,987,360 in 1945. During that period the amount of electricity consumed domestically advanced from 3,365,497,000 kwh. to 17,290,984,000 kwh., or from 1,693 kwh. to 4,128 kwh. per customer. The per customer consumption varied widely among the provinces; Manitoba led with 6,113 kwh. while Prince Edward Island and New Brunswick had the lowest averages. Farm customers added during 1958 numbered 12,086.

The Saskatchewan Power Corporation, which added 5,191 new farm customers in 1958, reported a large part of its farm electrification program completed. The effect of this program was reflected in a 21 p.c. increase in farm consumption of electricity. An 18 p.c. rise was recorded in Alberta, where a similar program was under way.

Canadians enjoy one of the lowest rates per kilowatt hour in the world. The revenue from domestic consumers averaged 1.61 cents per kwh. in Canada in 1958 as compared with 2.53 cents in the United States, and commercial and industrial sales averaged 0.8 cents per kwh. in Canada compared with 1.3 cents in the United States. The 1958 average bill for domestic and farm service stood at \$66.49 against \$28.05 for 1945, an increase of 137 p.c., while consumption per customer rose 144 p.c. Provincial bills ranged from \$92.43 in British Columbia to \$54.50 in Quebec.



Labour

At the turn of the present century Canada's labour force, less than two million strong, was composed mainly of farmers and farm workers, merchants and craftsmen working in small shops or on their own account. Today, over six million men and women, ranging from general labourers to highly trained professional workers and executives and from workers on the farm to those in large manufacturing plants, provide the nation with goods and services.

Development in the field of labour has been assisted by legislation at both federal and provincial levels. Laws have been enacted to set minimum standards for hours of work, wages and many other conditions of employment. Most Canadian workers, however, enjoy conditions of employment far better than those required by law. The right of workers to belong to labour unions of their own choosing is protected by law and union membership has grown rapidly, particularly since 1940. Today close to 1,460,000 persons are members of unions. Through their organizations they have negotiated collective agreements which generally embody joint labour-management decisions on wages and conditions of employment.

The Labour Force

The labour force of Canada, as measured by sample surveys conducted by the Dominion Bureau of Statistics, includes those people who have jobs plus those who do not have jobs and who are looking for work. "Job" in this sense means work for pay or profit, or unpaid work which contributes to the running of a farm or business operated by a relative. Thus a coal miner or a shopkeeper is considered to be in the labour force but a housewife or a student is not. The labour force is not a fixed group of people. It is constantly changing, as new workers enter and others leave.

The labour force showed a somewhat larger growth rate during 1959 than the previous year but the increase was still smaller than for most years in the post-war period. In 1959 the increase over 1958 averaged only 101,000, representing a gain of 1.6 p.c. This compares with a rate of 3.8 p.c. in 1957 and a long-term average of about 2 p.c. Lower immigration was one of the main reasons for the relatively slow growth of the labour force.

Employment in Canada fluctuates with the season of the year. In 1959, the number of persons with jobs was lowest in January at 5,538,000, then rose to a high of 6,206,000 in July and declined again to 5,861,000 in December.

Winter employment campaigns, initiated by the Federal Government in 1954, have now become an established part of the Canadian scene. Under various programs the Federal Government provides financial assistance to provincial and municipal governments for certain types of construction and development projects undertaken during the winter months. During the winter of 1958-59, these programs provided an estimated 1,870,000 man-days of employment.

Industrial Distribution of Persons with Jobs, by Sex, Week Ended Jan. 16, 1960

(Thousands of persons 14 years of age or over)

Industry	All Persons with Jobs			Paid Workers		
	Male	Female	Both Sexes	Male	Female	Both Sexes
Agriculture.....	563	31	594	79	1	85
Forestry.....	115	1	116	95	1	96
Fishing and trapping.....	1	1	1	1	1	1
Mining and quarrying ²	88	1	92	86	1	90
Manufacturing.....	1,159	287	1,446	1,094	279	1,373
Construction.....	343	10	353	290	1	299
Transportation ³	378	59	437	346	59	405
Public utilities.....	63	1	71	62	1	70
Trade.....	649	306	955	502	257	759
Finance, insurance and real estate.....	114	107	221	100	105	205
Service.....	704	702	1,406	608	654	1,262
Totals.....	4,184	1,515	5,699	3,265	1,382	4,647

¹ Fewer than 10,000.

² Includes oil wells.

³ Includes storage and communication.

In the labour force (January 1960) about three out of four persons are male and almost one-half are from 25 to 44 years of age. The average female worker is younger than the average male worker. With regard to occupation, about one worker in every seven is in agriculture at the seasonal peak; this

proportion drops to about one in ten in mid-winter. Geographically, about two out of three live in the provinces of Ontario and Quebec. The percentage of the labour force to the total population 14 years of age or over is lower in Newfoundland, the Maritime Provinces and British Columbia than in the remainder of the country. In non-agricultural industries, which in January 1960 employed 5,105,000 persons, about 88 p.c. of the men and 93 p.c. of the women are paid employees. In agriculture, on the other hand, paid employees form a relatively small element—hardly one worker in five, even during the harvest season.

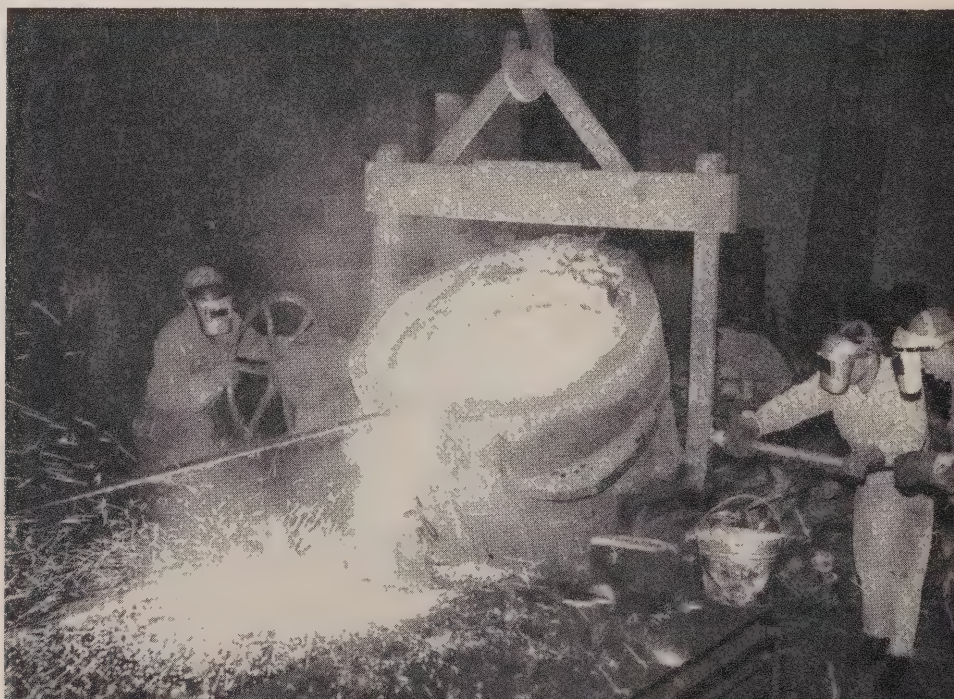
Occupational Distribution of Persons with Jobs, by Sex, Week Ended Jan. 16, 1960

(Thousands of persons 14 years of age or over)

Occupation	All Persons with Jobs			Paid Workers		
	Male	Female	Both Sexes	Male	Female	Both Sexes
Managerial.....	468	64	532	222	26	248
Professional.....	337	247	584	294	239	533
Clerical.....	273	464	737	273	456	729
Transportation.....	365	¹	368	341	¹	344
Communication.....	51	36	87	51	36	87
Commercial.....	255	169	424	250	147	397
Financial.....	48	¹	52	35	¹	38
Service.....	254	312	566	234	286	520
Agricultural.....	563	30	593	80	¹	85
Fishing, logging and trapping....	93	¹	93	71	¹	71
Mining.....	57	¹	57	56	¹	56
Manufacturing and mechanical ² ...	861	170	1,031	827	165	992
Construction.....	274	¹	275	247	¹	248
Labourers and unskilled workers (not agricultural, fishing, logging or mining).....	285	15	300	284	15	299
Totals.....	4,184	1,515	5,699	3,265	1,382	4,647

¹ Fewer than 10,000.
electric power production.

² Includes stationary enginemmen and occupations associated with



Employment Review of 1959

Production gains during the first part of 1959 were supported largely by increases in personal and government spending and re-stocking of business inventories. As the year progressed, other elements of demand strengthened which set the stage for expansion on a more widespread basis. Exports rose quite sharply in the second and third quarters after declining earlier in the year. Investment in non-residential construction began to provide a positive stimulus throughout the year. Outlays for housing receded somewhat from the record level achieved in 1958, but even so, the number of houses completed was very close to an all-time high.

Unemployment declined. The number of persons without jobs and seeking work averaged 13.6 p.c. less than in 1958. The 1959 "seeking work" average was 350,000 or 5.6 p.c. of the labour force; for 1958 it had been 6.6 p.c. of the labour force. Not only did the number of job seekers show a considerable drop over that year but people were unemployed for shorter periods and there was less partial unemployment.

In the employment field, improvement has been substantial. The total number of persons employed surpassed the pre-recession peak early in the summer and continued upward for the balance of the year. The overall employment gain over 1958 exceeded 150,000. The average work week in manufacturing increased by half an hour from January to August. In most collective agreements contracted for one year, wage rates rose by from 5 to 10 cents per hour. Reflecting the increase in employment and the advance of average earnings, labour income rose to an annual rate of \$17,700,000,000 in the second quarter. This was 8 p.c. higher than in the comparable period in 1958. Strike activity tied up forestry operations on the west coast for two months during the summer but otherwise there were no large-scale labour disputes during 1959.

Employment showed a fairly vigorous recovery during 1959 although it did not match the increase in production. In the third quarter of 1959 non-farm employment showed a year-to-year gain of about 4 p.c. compared with a 7 p.c. year-to-year increase in industrial production. This suggests that considerable productivity gains took place.

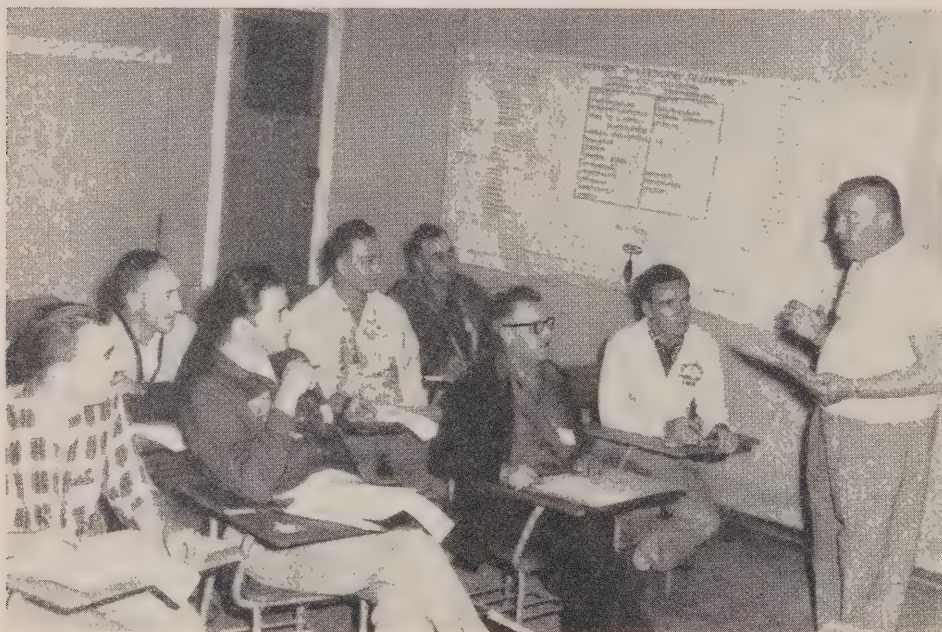
Employment gains during 1959 were widespread, with increases in all regions and most industrial divisions. Some of the largest gains occurred in the goods-producing industries which bore the brunt of the recession. Manufacturing figured prominently in the advance, reaching a record high level in mid-summer. Forestry showed a similar upward trend although the gains in this industry were not large enough to overcome all of the earlier losses. There was little overall change in mining employment as increased activity in metal mining was offset by losses in fuels, particularly coal mining. Construction activity, which held up fairly well during the recent business recession because of the strong support it received from housebuilding, showed increasing strength during 1959 as the result of an upturn in non-residential construction. Industries which service the rest of the economy (trade, service, transportation, storage, communication and finance) expanded at much the same rates as total industrial employment.

The breadth of the recovery during 1959 carried total non-farm employment well above the pre-recession peak. In October, the number of persons

Canadian primary iron and steel workers' earnings increased by about 265 p.c. between 1939 and 1959. In the same period retail prices of consumer goods increased by only 99 p.c.

with jobs in non-farm industries was estimated to be some 220,000 higher than a year before. More than one-fourth of the gain occurred in manufacturing, with durable goods and non-durable goods sharing about equally in the rise. The most notable increases in non-durable goods occurred in wood and paper products, rubber, leather, printing and publishing. In durable goods, employment expansion was centred largely in the iron and steel products industry. Primary iron and steel showed a particularly sharp rise. Other parts of the industry which showed marked improvements were agricultural implements, hardware and tools, industrial machinery, sheet metal products and heating and cooking appliances. Employment rose moderately over the year in electrical apparatus and supplies, non-ferrous metals, non-metallic minerals, motor vehicles and motor vehicle parts. The overall employment recovery in manufacturing would have been even greater but for reduced activity in aircraft and railway rolling stock.

Monthly statistics of employment and payrolls recorded increases between 1958 and 1959 in employment, aggregate earnings, and per capita earnings. The industrial composite index of employment rose by 1.5 p.c. over 1958, while that of payrolls rose by 6 p.c. The larger percentage gain in the payroll index reflected, in part, increases in wage and salary rates. A generally longer work week accompanying some quickening in the pace of industrial activity in 1959 also contributed. The composite average of weekly wages and salaries in the industries surveyed advanced by 4.3 p.c. from 1958 to a new high of \$73.47. The rise, due in the main to the factors just mentioned, was somewhat larger than that reported in 1958 over 1957, but was nevertheless rather below the annual average percentage increase recorded in the period since 1939.



Summer schools are held by trade unions and draw good attendance. Special courses for different types of workers are given, and general courses in such subjects as stewards' training, collective bargaining, labour history, laws affecting labour, international affairs and public relations.



A class in session at the Belleville Engineering School established by the Bell Telephone Company in 1959 for specialized training of their own engineers.

Index Numbers of Employment and Payrolls, and Average Weekly Wages and Salaries, by Province and Industry, 1958 and 1959

NOTE.—Figures are for the last pay periods in the months of January to December, and are computed from monthly returns from industrial establishments usually employing 15 or more persons.

Province and Industry	Index Numbers (1949=100)						Average Weekly Wages and Salaries		
	Employment			Payrolls					
	1958	1959	P.C. Change	1958	1959	P.C. Change	1958	1959	P.C. Change
							\$	\$	
Newfoundland.....	122.6	125.8	+ 2.6	202.4	212.2	+ 4.8	62.36	63.68	+ 2.1
Prince Edward Island..	114.9	126.3	+ 9.9	175.1	209.5	+19.6	51.15	54.75	+ 7.0
Nova Scotia.....	95.5	96.3	+ .8	148.6	154.6	+ 4.0	58.33	60.17	+ 3.2
New Brunswick.....	98.0	101.7	+ 3.8	150.8	162.4	+ 7.7	58.14	60.39	+ 3.9
Quebec.....	117.0	118.5	+ 1.3	192.7	203.6	+ 5.7	67.69	70.56	+ 4.2
Ontario.....	119.6	121.3	+ 1.4	197.8	209.3	+ 5.8	73.20	76.39	+ 4.4
Manitoba.....	108.7	112.2	+ 3.2	171.7	186.1	+ 8.4	66.85	70.16	+ 5.0
Saskatchewan.....	126.6	130.0	+ 2.7	206.9	218.6	+ 5.7	68.14	70.13	+ 2.9
Alberta.....	150.5	155.0	+ 3.0	246.4	263.9	+ 7.1	72.88	75.63	+ 3.8
British Columbia.....	114.7	115.1	+ .3	190.7	202.1	+ 6.0	75.88	80.09	+ 5.5
Composite.....	117.9	119.7	+ 1.5	194.1	205.7	+ 6.0	70.43	73.47	+ 4.3
Forestry (chiefly Logging).....	75.9	78.9	+ 4.0	136.0	141.3	+ 3.9	71.74	71.63	— .2
Mining.....	123.5	123.4	— .1	207.9	217.6	+ 4.7	86.60	90.76	+ 4.8
Manufacturing.....	109.8	111.1	+ 1.2	182.7	193.3	+ 5.8	72.67	75.84	+ 4.4
Durable goods.....	114.8	115.5	+ .6	190.6	201.1	+ 5.5	77.93	81.67	+ 4.8
Non-durable goods..	105.6	107.3	+ 1.6	175.0	185.6	+ 6.1	67.77	70.52	+ 4.1
Construction.....	126.2	130.3	+ 3.2	227.4	241.1	+ 6.0	74.54	76.55	+ 2.7
Transportation, storage and communication..	115.5	114.3	— 1.0	179.9	189.4	+ 5.3	74.72	79.65	+ 6.6
Public utility operation.	137.6	138.7	+ .8	242.8	257.6	+ 6.1	83.85	88.08	+ 5.0
Trade.....	131.6	135.3	+ 2.8	211.6	227.1	+ 7.3	60.20	63.12	+ 4.8
Finance, insurance and real estate.....	149.3	153.2	+ 2.6	233.0	247.4	+ 6.2	66.40	68.82	+ 3.6
Service.....	135.1	139.3	+ 3.1	221.0	236.1	+ 6.8	48.23	50.27	+ 4.2

Labour Legislation

Under Canada's federal system of government, labour laws may be enacted either by the provincial legislatures or by Parliament, depending on the nature of the industries concerned. The field in which federal legislation applies includes such industries as navigation and shipping, air transport, transportation extending beyond the bounds of a province, telegraphs, radio and television, grain elevators, banking, and operations of federal Crown companies. Most employment in factories, mines, construction, commercial firms and the service industries is subject to provincial legislation.

The federal Industrial Relations and Disputes Investigation Act and a comparable Act in each province assert the right of workers to belong to unions of their own choice, and provide a procedure for the certification of a union as the bargaining agent of a unit of employees. Following certification, that is, official recognition by the Labour Relations Board that a union represents a majority of the workers in a plant or part of a plant, the union and the employer are required to bargain collectively for an agreement governing wages and working conditions. Once signed, a collective agreement is binding upon the employer, the trade union and all the employees concerned, and any differences arising between the parties during the term of the agreement must be settled by arbitration or otherwise, without resort to strike or lockout.

The federal Act and most of the provincial Acts provide for compulsory conciliation. If a dispute arises in connection with the negotiation of an agreement, employees are forbidden to strike until they have gone through a process of conciliation (first, by government conciliation officers and, secondly, failing settlement at the first stage, by a conciliation board). One member of a conciliation board is nominated by the union and one by the employer. The chairman is named by the other two members or, failing agreement, by the Minister of Labour.

The parties are not obliged to accept the recommendations of a conciliation board and, at the end of a specified period after the receipt of the board's report by the Minister, are free to strike or lockout. The temporary suspension of the right to strike is based upon the principle that the time required for the statutory conciliation procedures serves as a "cooling off" period, and that, with the publication of the report, public opinion is brought to bear on the parties to reach agreement.

Unfair labour practice provisions prohibit employer participation in the organization or administration of a trade union or discrimination against workers for union membership or activities. Penalties are provided for violations of the Acts.

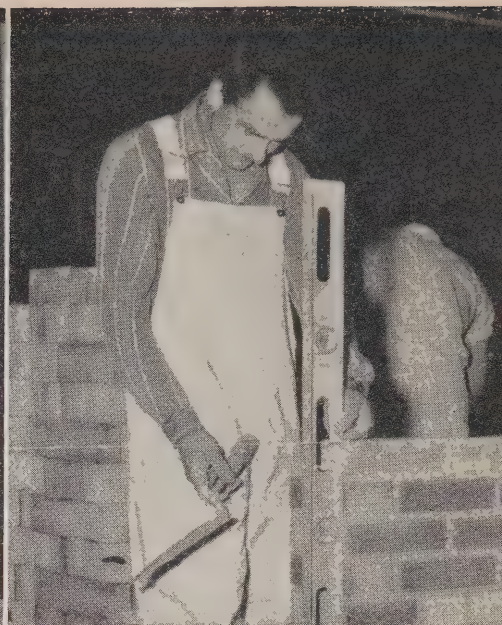
In some provinces, certain classes of employees such as policemen, firemen, teachers and, in Quebec, employees of municipalities or public utilities and members of the provincial civil service are forbidden to strike and, in case of dispute, have their wages and working conditions determined by final and binding arbitration.

In British Columbia, restrictions have been placed on picketing, and trade unions and employers' associations have been made legal entities liable for damage actions.



The new Workmen's Compensation Board hospital and rehabilitation centre at Downsview, Ont., is the most advanced treatment centre of its kind in North America. This extensive structure, with accommodation for 500 patients, is the culmination of the gradual recognition that society is responsible for the rehabilitation of workers seriously injured on the job. Its function is to provide, at no cost to the patient, a rehabilitation program that will return him, physically and mentally restored, to his place in the working world.

Fair employment practices laws enacted by Parliament and by the legislatures of six provinces are designed to ensure to all persons an equal opportunity to obtain and retain employment, subject only to individual qualifications for a particular job. Discrimination on grounds of race, colour, religion or national origin is forbidden. The Acts also forbid discrimination by trade unions in the admission of their members. The procedure for dealing with complaints under the Acts is one of investigation, conciliation and persuasion but there is provision for the issuance of an order by the Minister requiring compliance with the law, and, as a last resort, for prosecution in the courts. In some Acts provision is made for educational programs to promote a public awareness of the law.



Most provinces have agreements with the Federal Government under which federal financial assistance is provided for the promotion of apprenticeship. In Quebec, however, construction workers are trained in centres operated by a commission made up of representatives of employers, unions and the provincial government. Qualification in a trade takes four years—six months full-time instruction followed by training on the job and night courses.

Under a workmen's compensation law in each province, a worker employed in an industry covered by the Act is entitled to compensation and medical aid for personal injury resulting from an accident arising out of and in the course of employment or for disablement caused by an industrial disease, unless he is disabled for less than a specified number of days, known as the waiting period. Compensation is paid at the rate of 75 p.c. of average earnings, subject to the provision that earnings above a specified maximum may not be taken into account. The ceiling on annual earnings varies from one province to another, ranging from \$3,000 to \$5,000. After the period of temporary disability is over, any permanent disability resulting from the accident is determined, and an award made in the form of a life pension or a lump sum. In fatal cases, dependants are awarded fixed monthly amounts. Compensation and medical aid are paid from an Accident Fund to which employers are required to contribute and which provides a system of mutual insurance.

Apprenticeship laws in all provinces provide for the training of young people in designated skilled trades through a combination of on-the-job training and class instruction.

Seven provincial laws and a federal law require that women be paid the same wage rates as men when they do "the same", "identical or substantially identical", or "comparable" work. (The wording of the Acts varies.) Provisions for enforcement of the equal pay laws are similar to those of the fair employment practices Acts.

All provinces have minimum wage laws, and, except in Prince Edward Island, minimum wage rates are in effect. These are applicable in most provinces to workers of both sexes. In Nova Scotia and Ontario, minimum rates apply only to women, and in New Brunswick, only one order covering the canning industry is in effect for men.

Five provinces have laws of general application limiting working hours. The Acts of Alberta, British Columbia and Ontario set daily and weekly limits on hours (e.g., 8 hours in a day and 48 hours in a week in Ontario), whereas those of Manitoba and Saskatchewan provide that time and one-half the regular rate must be paid where work is carried on beyond specified daily or weekly hours.

Minimum wages and maximum hours of work are set for some industries and areas under the Quebec Collective Agreement Act and under industrial standards or similar laws in six other provinces.

Annual vacations with pay are provided for workers in Canada under eight provincial laws and a federal law. The federal law provides for a one week's vacation with pay after one year of service and two weeks after two years for employees in undertakings subject to the jurisdiction of Parliament. In New Brunswick, Nova Scotia, Ontario and Quebec, a worker is entitled to a vacation with pay of one week after a year of employment; in Alberta, the vacation requirement is one week after one year's service and two weeks after two years; and in British Columbia, Manitoba and Saskatchewan, an employee is entitled to a two weeks' vacation with pay after working one year. The Saskatchewan Act further provides for a three weeks' vacation after five years' service with the same employer. The New Brunswick legislation applies only to mining, construction, and the canning and packing industries.

Legislation, which may be federal, provincial or in some instances municipal, sets standards to be observed in work places so as to secure the safety and health of employees and provides for a system of inspection to ensure their enforcement. In all provinces in which mining is carried on, laws designed to ensure the safest possible working conditions in mines are in effect. Factories Acts in eight provinces lay down rules with respect to premises, equipment and practice in factories, covering such matters as sanitation, heating, lighting, ventilation, machine-guarding, reporting of accidents and various welfare measures. Steam boilers must be built to an approved design and operated by engineers holding certificates of the proper class for the equipment involved. Legal standards for the construction industry are enforced by municipal inspectors in some provinces. With respect to railways, a Board established by federal legislation has authority to issue safety rules having the force of law. Safety measures for the protection of seamen are prescribed in federal law by the Canada Shipping Act.

Labour Organizations

Close to 1,460,000 men and women from Newfoundland to British Columbia were members of labour unions in 1959. Two central bodies—the Canadian Labour Congress, over a million strong since its formation in 1956, and the Canadian and Catholic Confederation of Labour—continued to represent some 85 p.c. of organized labour. Most of the balance of union membership in Canada remained distributed among organizations active on a regional, national, or international level, but independent of a central labour congress.

At the beginning of 1959, unions belonging to the Canadian Labour Congress had a total membership of 1,154,000, while the Canadian and Catholic Confederation of Labour was approximately 97,000 strong.

As in previous years, more than two-thirds of the organized labour force in Canada belonged to unions that operate on the international level. Ninety of the 110 international unions active in Canada in 1959 were affiliates of the Canadian Labour Congress, and 84 of these were within the American Federation of Labor and Congress of Industrial Organizations as well. Twelve of the remaining 20 international unions had no congress link in Canada, but were affiliated with the AFL-CIO.

National and regional unions in Canada at the beginning of the year totalled 51, with the number of CLC affiliates remaining at 20 and those of the CCCL at 13.

Taken together, international, national and regional unions had membership of more than 1,381,000, distributed among 161 organizations ranging in size from eight members to the 80,000-strong United Steelworkers of America.

The grand total of nearly 1,460,000 members reported by labour organizations in 1959 was equal to approximately 33 p.c. of the estimated total number of non-agricultural paid workers in Canada.

Unemployment Insurance

A contributory scheme of unemployment insurance and a nation-wide free employment service is in operation in Canada. The Unemployment Insurance Act, which became effective in July 1941, is administered by an Unemployment Insurance Commission, consisting of a Chief Commissioner and two Commissioners—one appointed after consultation with organized labour and one after consultation with employers. Regional and local offices strategically located across the country handle applications for employment and claims for unemployment insurance benefit.

All persons employed under a contract of service are insured unless specifically excepted. Exceptions include such employments as agriculture, domestic service, school teaching and those employed on other than an hourly, daily, piece or mileage basis with annual earnings exceeding \$5,460 (raised from \$4,800, effective September 27th, 1959). Persons employed on an hourly, daily, piece or mileage basis are insured regardless of earnings level. Employers and insured workers contribute equally, the contributions being based on the wages or salaries earned. The Federal Government adds one-fifth of the total employer-employee contributions and pays administration costs.

Rates of Contribution and Benefit under the Unemployment Insurance Act

(Effective Sept. 27, 1959)

Range of Earnings	Weekly Contributions		Employee's Average Weekly Contribution	Weekly Benefit	
	Em- ployer	Em- ployee		No Dependant	With Dependant
	cents	cents	cents	\$	\$
While earning in a week:					
Less than \$9.00.....	10	10			
\$ 9.00 and under \$15.00..	20	20	Less than 25.....	6.00	8.00
\$15.00 and under \$21.00..	30	30	25 and under 34..	9.00	12.00
\$21.00 and under \$27.00..	38	38	34 and under 42..	11.00	15.00
\$27.00 and under \$33.00..	46	46	42 and under 50..	13.00	18.00
\$33.00 and under \$39.00..	54	54	50 and under 57..	15.00	21.00
\$39.00 and under \$45.00..	60	60	57 and under 63..	17.00	24.00
\$45.00 and under \$51.00..	66	66	63 and under 69..	19.00	26.00
\$51.00 and under \$57.00..	72	72	69 and under 75..	21.00	28.00
\$57.00 and under \$63.00..	78	78	75 and under 82..	23.00	30.00
\$63.00 and under \$69.00..	86	86	82 and under 90..	25.00	33.00
\$69.00 and over.....	94	94	90 and over.....	27.00	36.00

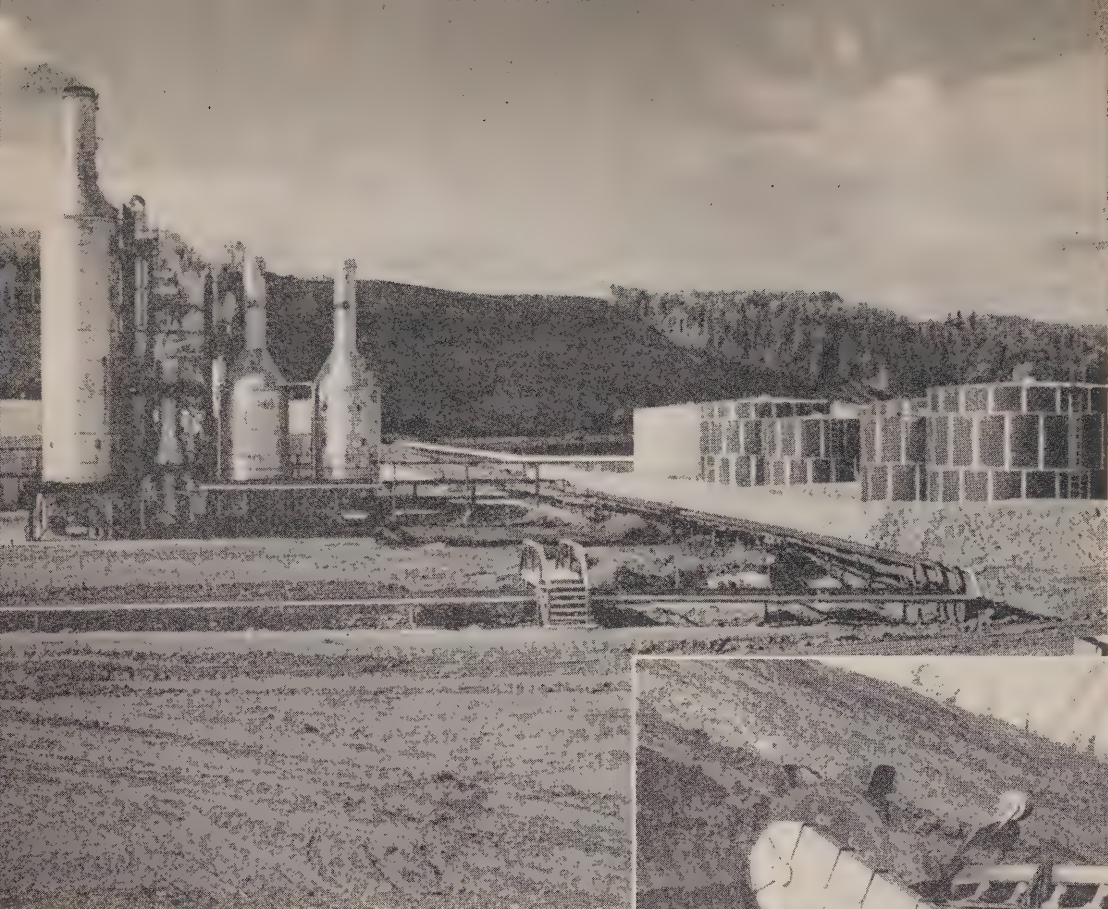
Persons Insured under the Unemployment Insurance Act, by Industrial Group and Province, as at June 1, 1959¹

Industrial Group	Both sexes	Province	Both sexes
	No.		No.
Forestry and logging.....	64,700	Newfoundland.....	59,300
Mining, quarrying and oil wells.....	107,200	Prince Edward Island.....	12,500
Manufacturing.....	1,301,300	Nova Scotia.....	134,700
Construction.....	320,900	New Brunswick.....	111,000
Transportation, storage and commu- nications.....	385,400	Quebec.....	1,083,400
Public utility operation.....	47,200	Ontario.....	1,604,800
Trade.....	695,800	Manitoba.....	207,300
Finance, insurance and real estate...	157,000	Saskatchewan.....	93,400
Service.....	533,400	Alberta.....	251,400
Unspecified.....	26,700	British Columbia.....	361,200
Claimants.....	279,400		
Totals.....	3,919,000	Totals.....	3,919,000

¹ Preliminary.

During 1959 a total of 2,428,000 initial and renewal claims were filed at local offices. Of this total, 1,999,000 were classed as "entitled to benefit" and benefit payments amounted to \$406,097,000. Comparable data for 1958 were 2,781,000 claims filed, 2,382,000 entitlements to benefit and \$492,901,000 paid in benefit. Claims considered under the seasonal benefit terms and payments made under such terms are included in these data.

The National Employment Service. The Unemployment Insurance Commission operates the National Employment Service rendering service to all workers and employers in Canada through a national chain of about 200 offices. In 1959 a total of 986,073 vacancies were filled by the employment service. Of these, 694,541 were jobs for regular employees and 256,415 were casual placements; the number of persons for whom jobs were found in other areas was 35,117.



Refining and storage equipment in the pilot plant at Mildred Lake, Alta., where four oil companies are jointly conducting studies on the feasibility of extracting hydrocarbons from the Athabaska oil sands. Six buckets on a wheel dip into the mining face and drop their load on a conveyor belt which takes the oil sand to the extraction unit.



Scientific Research

"Science all around us" has not only become the title of a popular television program but also part of our national outlook.

Today scientific research and development open up new opportunities for expansion and growth in the same way as the land frontier did yesterday. Science, "the endless frontier", as Dr. Vannevar Bush so aptly calls it, has a particular significance for Canada: the discoverers, the frontiersmen, the settlers of old have their counterparts in the scientists, engineers, and entrepreneurs of today.

Paradoxically enough, the more we hear about science, the less we know about it. For instance, in the words of Dr. E. W. R. Steacie, President of the National Research Council, "the interlocking of science and technology has led to considerable confusion about the aims of science. It is, of course, the function of science to enquire into the workings of nature; and the application of such knowledge has become the mainstay of technology. The natures and

motives of science and technology are thus distinctly different, although in many cases their methods may be very similar. Science is thus in a dual position as part of a humanistic education (after all, it is a branch of philosophy), and as the basis of technological development."

This is why the implications of "scientific research and development" in Canada can be explored intelligently only if it is first made plain that this term covers a multitude of virtues; that the extolling of these virtues nowadays sounds very much like preaching to the converted; and that, in fact, the problem of how to *encourage* expenditures of resources on scientific research and development has gradually been replaced by problems of how to *allocate* scarce scientific resources.

And so, although the modern "research picture" itself is composed of an intangible mesh, statistical surveys have made it possible to disentangle at least a few strands forming its frame: sources of research funds, amounts spent, areas of expenditures, number of persons employed.

Industrial research-development expenditures in Canada were surveyed for the first time in 1955, then again in 1957; the third survey in this series, for 1959, is in press; so is the latest survey made of scientific activity including research and development in the Federal Government.

Industrial Research. The latest survey indicated that in 1957, \$149,000,000 was spent by 455 firms on industrial research and development and that intended expenditures for 1958 were \$160,000,000. The Federal Government through contracts provided \$61,600,000 in 1957 or 41.3 p.c. of the funds spent. Of the \$149,000,000 spent in 1957, \$125,000,000 or 84 p.c. was for research performed by the reporting firms, \$4,000,000 by other organizations in Canada and \$20,000,000 was done outside Canada.

Of the \$125,000,000 of research and development done within the companies more than half, \$64,600,000, was done in the transportation equipment industry which includes the aircraft companies; \$14,400,000 was done by electrical apparatus and supplies industry; the chemical products industry accounted for \$11,700,000. These three industries accounted for \$90,700,000 or 72.2 p.c. of total research done by Canadian firms.

About 64.8 p.c. of industrial research and development was in engineering, while about 20.4 p.c. was in the fields of physics (6.8 p.c.) and chemistry (13.6 p.c.); metallurgy accounted for 8.6 p.c. of the expenditures. Very little industrial research was done in the life sciences, 1.7 p.c. in medicine and 0.3 p.c. in agriculture.

Firms with total annual sales of \$50,000,000 or over (57 firms) spent 72 p.c. or \$108,100,000 of the funds for research and development; 87 p.c. or \$130,100,000 of the funds were spent by firms with sales of \$10,000,000 or more.

Replacement value of facilities for use in industrial research and development was estimated at \$59,000,000 at December 31, 1955. Capital expenditure for new or extended facilities was \$12,800,000 in 1957. The largest capital expenditures were in the transportation equipment industry and in the coal and chemical products industries.

Almost 4,500 research and development scientists and engineers were employed by industry in 1957. About 61 p.c. or 2,699 were engineers. The

largest numbers of scientists and engineers were employed by the transportation equipment industry, 1,312 (29 p.c.), while 787 (18 p.c.) were employed by the electrical apparatus and supplies industry and 687 (15.4 p.c.) by the chemical products industry.

Canadian firms, in addition to doing their own research, obtain substantial benefits from research done in other countries; some of these benefits accrue from contractual or other arrangements, e.g., on the basis of payment of a royalty or payment for services. Moreover, non-resident control of much of our industry provides a ready access to research results of parent companies abroad; payments for these benefits are, however, rather hard to estimate and may be reflected only in a subsidiary company's profit position.

The magnitude of the costs involved may best be seen in a partial estimate made by the U.S. Department of Commerce which indicates that, in 1957, the United States received from Canada \$65,000,000 for such services; in 1958, this figure increased to nearly \$70,000,000.

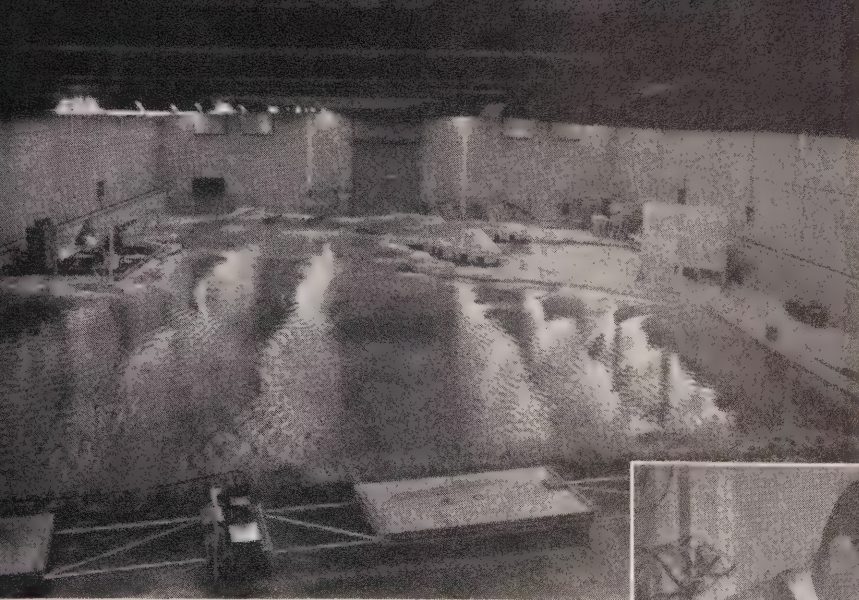
Universities. Sponsored or assisted research funds spent by the universities in the financial year ended in 1958 amounted to \$11,100,000 for the 31 universities surveyed by the Canadian Association of University Business Officers. These funds do not include the expenditures incurred by the universities in undertaking this sponsored or assisted research. The Federal Government provided \$6,800,000 or 61 p.c. of the funds for this sponsored research; foundations and associations provided \$1,700,000 or 15.3 p.c., while corporations provided \$732,615 or 6.6 p.c. The balance comes from provincial and municipal governments, individuals and other sources.


Government Research. In Canada, the main burden of research has always been carried by government agencies, notably by the Federal Government. In fact, those government departments that administer the development of natural resources have the longest history of research, e.g., Agriculture, Fisheries, Mines and Technical Surveys, Northern Affairs and National Resources, and Trade and Commerce.


The fact that not every province has a research organization of its own does not indicate lack of interest in research on the provincial level. It must be remembered that most provincial governments have university laboratories at their disposal for consultation, particularly about local industrial and agricultural problems.

Three of the Federal Government's research agencies enjoy a considerable measure of autonomy—the National Research Council, the Defence Research Board, and Atomic Energy of Canada Limited. Brief reports on their recent work follow.

National Research Council. The largest and most diversified program of civil research in Canada is carried out by the National Research Council. Its laboratories, at Ottawa, Saskatoon and Halifax, are engaged in many investigations of interest to Canadian industry. Some are undertaken on the initiative of the Council itself in order to develop promising ideas of its own scientists. Some are taken up on recommendation of the Council's associate committees, which include representatives from industry who are interested in particular problems; and others are undertaken in co-operation with individual companies. Routine test work is avoided except when the Council is asked to certify performance of equipment as an independent body.



A hydraulic scale model of the harbour at Port aux Basques, Nfld., is used to study wave action and determine where and how to place the breakwater. 

Scientific aspects of corrosion are studied at the Applied Chemistry Division of NRC. Industrial and domestic corrosion costs Canada an estimated \$400,000,000 annually. 



Each problem presented to the Council is considered on its merits and dealt with in what seems the most practical way: those of national interest may be undertaken at the expense of the Council; the expense of company problems of less than national scope may be shared by the company and NRC; when facilities are not available elsewhere, specific industrial research may be undertaken by NRC on a fee basis, the results of which become the property of the company.

NRC operates a Technical Information Service, the function of which is to help bridge the gap between the fund of technological know-how already available and the needs of companies with little or no research facilities. In 1958 it handled about 10,000 inquiries from all types of industrial establishments. In 1959, this figure rose to 11,800.

The TIS has a staff of professional engineers and scientists at Ottawa and also maintains field men in the main industrial centres of the country, most of whom are attached to the provincial research councils. Where a problem is of wide interest a report is prepared by the TIS for general distribution. All services provided by TIS are literally "free for the asking".

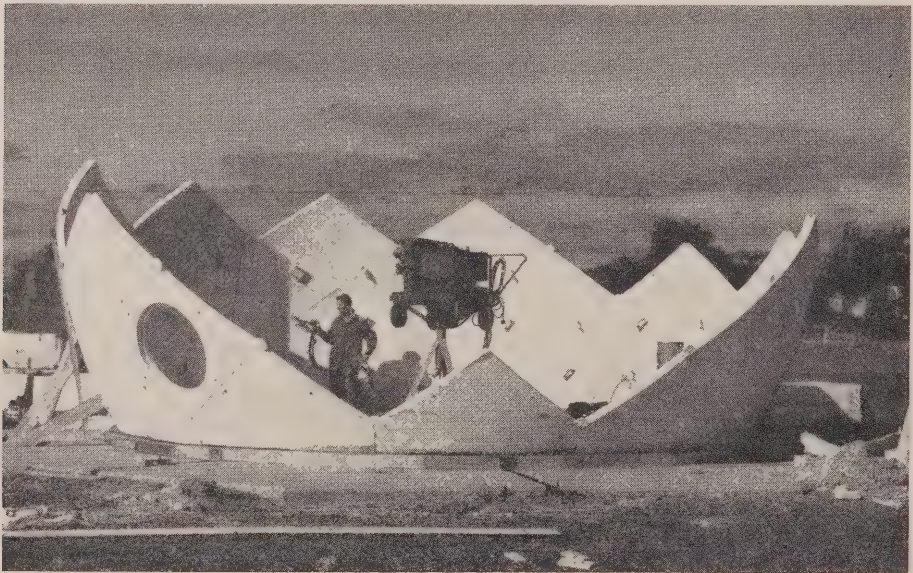
The NRC also gives financial help to scientific societies in Canada as well as to international congresses meeting here; it advises the government on scientific matters; it provides direct aid to science in the universities. In 1959, out of the Council's budget of \$30,000,000, over \$6,000,000 were devoted to scholarships and grants in aid of research.

The Defence Research Board. The formulation of broad general policies for defence research and development in Canada, together with the co-ordination of the defence research program in the universities and with industry and government agencies, is the responsibility of the Defence Research Board. The Board has been functioning since 1947 under the National Defence Act and is made up of a chairman, a vice-chairman, six ex-officio members and a number of appointed members.

In addition to its Ottawa headquarters, the Board has an operational research group and eleven field research stations across Canada, as well as liaison offices in London and Washington. Its efforts are concentrated on defence problems of particular importance to Canada or on those problems for which Canada has unique resources or facilities. Existing research facilities are used wherever possible to meet the needs of the Armed Forces and new facilities have been built up only in those fields that have little or no civilian interest. All operations are co-ordinated with developments in the United Kingdom and the United States in order to eliminate any duplication of effort.

Atomic Energy. Attention is now focussed throughout the world on the transition of atomic energy from a large uranium mining operation in support of military uses to a more durable phase when a large fraction of the expanding annual construction of new electric generating plants will employ nuclear energy. In Canada uranium mining and export has reached a value of about \$300,000,000 a year, so the transition is acutely felt.

During the next ten years a large part of the relatively small uranium supply for nuclear power will be directed to the supporting inventory of nuclear fuel; beyond that the make-up to replace consumption is foreseen as rising to match and surpass the current world rate of production. By that time the atomic energy industry as a whole would be supported by the consumers of electric power, but at present in all countries and for a number of years to



Assembling a radome from pre-moulded panels of foam plastic. It is designed to meet the need to house radar tracking devices in shelters that will not obstruct or distort radio waves.

come, the young industry has the greater part of its costs furnished directly or indirectly through taxation. In an intermediate phase, capital advances made in anticipation of revenues from power consumers will be important.

Two government-owned crown companies have the basic responsibilities for atomic energy in Canada; they are Eldorado Mining and Refining (1944) Limited, concerned with uranium supply, and Atomic Energy of Canada Limited (AECL) concerned with nuclear research and development, the design and construction of reactors for nuclear power and the production of radioactive isotopes and associated equipment such as Cobalt-60 Beam Therapy Units for the treatment of cancer.

For the greater part, the mining operations are conducted by private companies supported by export contracts that would have terminated in 1962, but are now being revised so that some will be stretched out, without increase in total supply, to 1966.

Atomic Energy of Canada Limited has an eleven-man Board of Directors that includes individuals from private industry, public and private power companies, and the universities. The Company's major plant is near Chalk River, its Nuclear Power Plant Division is located near Toronto, and its Head Office and Commercial Products Division are both in Ottawa. The Company is collaborating with the Canadian General Electric Company Limited and the Hydro-Electric Power Commission of Ontario (HEPC) in the building of a pilot atomic power plant, known as NPD-2 (Nuclear Power Demonstration), at Rolphton on the Ottawa River, 15 miles above the Chalk River plant. NPD-2 will generate 20,000 kilowatts and is scheduled for operation in 1961. AECL is also designing and constructing with the assistance of HEPC a full-scale nuclear power plant known as CANDU to supply 200,000 kilowatts. This plant will be located at Douglas Point near Kincardine on Lake Huron and will be incorporated in the HEPC system. By agreement, HEPC will purchase the plant when it is in satisfactory operation.

To ensure that all other utilities are kept fully informed of the progress being made, the Federal Government set up in 1954 an Advisory Committee on Atomic Power Development. This committee, representing the utilities, meets periodically at Chalk River to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada, and, through foreign government agencies and several international organizations, many technical groups in other countries. Close ties are kept with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. More or less formal collaboration has been established also with the International Atomic Energy Agency, the Organization for European Economic Cooperation, Euratom, India, France, Sweden, West Germany, Switzerland and Japan, and visits have also been exchanged with other countries.

During 1959 AECL announced that further expansion at Chalk River would be limited and that a site to receive the next major research and development facility had been selected in Manitoba on the Winnipeg River, about 65 miles from Winnipeg.

A notable event of the year was the commissioning of the first privately owned high-power experimental reactor in Canada at McMaster University, Hamilton, Ontario.

A table of the Canadian nuclear reactors now established or under construction is given below.

Canadian Nuclear Reactors

(in operation, under construction or approved for construction)

Name	Location	Date of Start-up	Power	Use
Zero Energy Experimental Pile (ZEEP)	Chalk River, Ontario	1945	100 w	Lattice experiments
National Research Experimental (NRX)	Chalk River, Ontario	1947	40,000 kw	Research and isotope production
National Research Universal (NRU)	Chalk River, Ontario	1957	200,000 kw	Research and plutonium and isotope production
Pool Test Reactor (PTR)	Chalk River, Ontario	1957	100 w	Reactivity and absorption measurements
Toronto University Sub-Critical Reactor	Toronto, Ontario	1958	—	Research and teaching
McMaster Nuclear Reactor (MNR)	Hamilton, Ontario	1959	1,000 kw	Research
ZED-2	Chalk River, Ontario	1960	100 w	Lattice experiments
Canada-India Reactor (CIR)	Bombay, India	1960	40,000 kw	Research and isotope production
Nuclear Power Demonstration (NPD-2)	Rolphton, Ontario	1961	20,000 kw (electricity)	Power demonstration
Canadian Deuterium-Uranium (CANDU)	Douglas Point, Ontario	1964/65	200,000 kw (electricity)	Power

The Chalk River Project is a research and development establishment. Basic and applied research is carried on by about 200 professional scientists and engineers, supported by 300 technicians. Most of these scientists and engineers are engaged part or full time on the development of nuclear fuel, on preliminary design and optimization calculations for nuclear power reactors, on solving technical problems encountered in the operation of the reactors, on studies of potential accident conditions in and around reactors, such as a burst in a pressurized water cooling system, on studying disposal of radioactive wastes, on design of instruments for reactor operation such as monitors for traces of normal water in heavy water, for radioactivity in flowing water, and on fail-safe and dependable control systems.

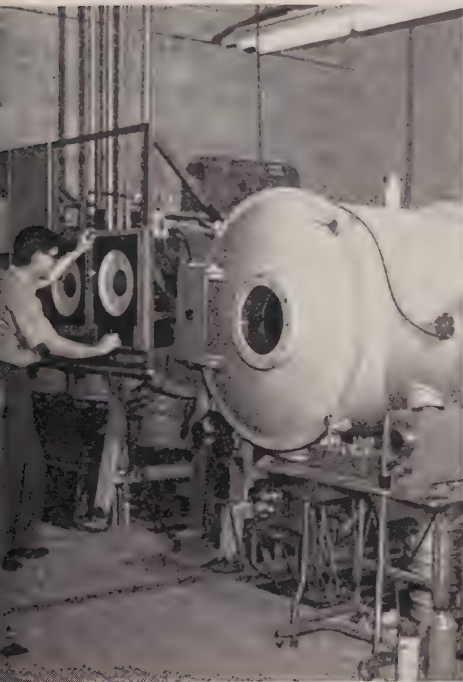
The generation of electricity by nuclear power on a competitive economic basis is expected to be established by the type of reactor now being designed by the Nuclear Power Plant Division at Toronto. This promise rests on the attainment of very low-cost fuelling by an extremely simple system tested over many years by experiments in the NRX reactor. The fuel will be uranium dioxide specially prepared from natural uranium entirely in Canada. Two other types of power reactors are also under study.

Outer Space Research

In Canada, as in other countries, the mysteries of outer space are being probed by scientists in many fields. The first in a series of test firings of the U.S. Army's Lacrosse ground-to-ground missile was carried out near Fort Churchill in January, 1960, by a joint Canadian-U.S. test team. The missile landed on target on the snow-covered tundra near the shore of Hudson Bay.



The world's only low-density wind tunnel of appreciable size, capable of reproducing conditions faced by artificial satellites travelling at supersonic speeds in a near-vacuum.



Defence Research Board's Prince Albert Radar Laboratory near Prince Albert, Sask., comprises a giant 84-ft. dish-type antenna mounted on a 90-ft. reinforced concrete tower and an associated laboratory building. It is hoped that study of the aurora borealis will disclose why the northern lights garble radio and radar reception.



An aluminum mockup of Canada's first satellite, now being designed and built in the Defence Research Telecommunications Establishment in Ottawa. In effect, it will be an outer space radar station.



Transportation and Commerce

ALL growth is movement, and movement is essential to growth. The growth of Canada—like that of any other young country—has been, and still is, characterized by the constant probing for new routes by which men and materials may be moved from place to place. The first routes of commerce were the waterways—the Ottawa River and its tributaries, and the mighty St. Lawrence and Great Lakes system, today the world's greatest inland commercial seaway. Overland trails were followed by the life-line of the transcontinental railway and, later, transportation left the ground as the development of airways speeded up the pace of travel. By boat, by train, by plane, by motor transport and by pipeline, the distribution of goods and services to those who need them, when and where they want them, creates unceasing movement along the avenues of commerce. To direct this ordered traffic there must be constantly available a means of communication; whether it be by mail, by telephone, by wire or by radio, it is by the transmittal and receipt of human messages that Canada has become the fourth largest trading nation on earth.

Human ingenuity continues to devise new forms of goods and services; at first luxuries, soon they become "necessities". Each of them, be it a gadget for making radish roses or a row of public, coin-operated washing-machines, sets into motion a whole new series of handling techniques and the wholesaler, the retailer, the salesman, the banker, the advertising copywriter and the delivery boy—to name only a few—become involved.

The year 1959 showed another increase in the constantly growing demand for goods and services in Canada. Canadians bought more of everything, made more telephone calls, ate more restaurant meals, rented more hotel rooms, borrowed more money, spent more on car repairs and smoked more tobacco. The movement essential to growth showed no sign of flagging.

Transportation

With the opening of the St. Lawrence Seaway to commercial traffic in June, 1959, Canada's oldest route of commercial traffic became the longest inland deep-draught shipping lane in the world, along which large carriers transport bulk freight, such as grain, oil, iron ore, lumber and heavy machinery,



The St. Law



er, fashioned by man to provide an inland seaway and a source of hydro-electric power.

with ponderous dignity. But it is still the railways that, summer or winter, in blizzard or heat-wave, provide the principal means of moving material, even carrying carriers themselves. Air service is increasing continuously, whisking people across the continent between dawn and dusk and making a serious bid for the light freight traffic. It is the air services, both scheduled and non-scheduled, on which the north depends, not only for exploration and settlement, but for life itself. The roads of Canada are used not only for the trucking of goods, but in ever-increasing numbers by the people for personal pleasure, for there is one passenger car on the road for every five Canadians. Population congestion on the outskirts of the larger cities has stimulated construction of strangely shaped expressways and throughways leading from the city's heart to its extremities. Perhaps the least-known form of transport is the pipeline, through which, at minimum cost, oil and gas flow from oilfield to consumer.

Railways

Two great transcontinental railway systems operate almost all of the railway facilities in Canada—the Canadian National Railway System, a government-owned body, and the Canadian Pacific Railway Company, a joint stock corporation. These systems, though highly competitive, still co-operate in many fields where duplication of service is not profitable. Both systems, in



Sixty years after the gold rush, romance still rides the narrow-gauge rails of the White Pass and Yukon Route. Now partly dieselized, it plays an important part in the development of the North as the middle link in a transportation chain which carries goods from west coast points to Skagway, Alaska, by steamer, over the White Pass to Whitehorse by rail and to Alaska Highway points beyond by truck, all without intermediate reloading. This adaptation has been made without losing, for the railway's tourist passengers, the flavour that characterized travel on the frontier of 60 years ago.

in addition to their wide-flung railway and express operations and their extensive maintenance services, conduct other transport facilities—fleets of inland and coastal vessels and ferries, ocean-going steamships, nation-wide telegraph services providing communication between all principal points of Canada with connections to all parts of the world, highway transport services, year-round and resort hotels, and extensive passenger and freight air services over domestic and international routes.

The Board of Transport Commissioners for Canada controls railway freight and passenger rates and makes rules and regulations relating to railroad construction, operation and safety. In December, 1958, the Board authorized an interim freight rate increase of 17 p.c., and, shortly afterwards, required the railways to specify before April 10, 1959, the amount of supplementary relief sought. Accordingly, the railways made formal application for a general rate increase of 12 p.c. In the meantime, however, the Government had announced that no further general increases would be allowed for a period of one year, as it intended to proceed with an inquiry into the railway rate

structure and other matters affecting railway transportation. In May a Royal Commission was appointed. On July 8, 1959, Parliament passed the Freight Rates Reduction Act. Designed as a relief measure for shippers, the Act provided a fund of \$20,000,000 to permit a reduction in class rates and commodity rates (other than competitive rates) for a period of one year. In compliance with the Act, the Board of Transport Commissioners ordered the substitution of an increase of 10 p.c. instead of the interim increase of 17 p.c.

This increase in freight rates was the largest factor in producing an increase in railway revenue for the two lines of more than \$45,600,000, from \$1,172,358,263 in 1958 to \$1,217,970,915 in 1959. During the same period, railway expenses also increased, from \$1,130,940,505 to \$1,162,581,929, largely due to increased labour costs. Revenue per passenger mile decreased by an average of 10 cents, while revenue per ton mile of freight increased by an average of 8 cents.

In the hope of persuading the motoring public to travel by train, revolutionary price plans with a double appeal—economy and convenience—have been instituted. Group economy fares, all-inclusive travel plans and instalment payments make train travel attractive.



During 1959 both railways continued to improve their equipment and services. Highlights were the progress made by both companies in switching over to diesel locomotives. By the year's end, diesels were handling from 93 p.c. to 99 p.c. of freight, passenger and yard service.

Expanding and extending the "piggy-back" service, the railways added 700 flat cars to their rolling stock. These flat cars carry loaded trailers from one point to another, where they are once more hooked up to motors and return to the highways.

To tempt the dwindling passenger trade, both railways initiated various plans. Included in these are the "Go Now—Pay Later" time-payment plans; credit cards offering credit for railway or airline accommodation, telegraph, express, hotel and car rental services; and plans for a reduction in rates for groups travelling together and all-inclusive rates covering transportation, berths, meals and tips. "Railiners"—self-propelled diesel cars—are used effectively on short runs. Cafeteria service on trains has proved popular and is being extended.

Operations of hotels owned by the two railways showed an improvement over 1958. The Queen Elizabeth Hotel in Montreal operated for the full year (in 1958 it was in operation for only eight months), and the new addition to the Royal York in Toronto brought it back to its position as the largest hotel in the Commonwealth, with 1,600 rooms. A 160-room addition to the Nova Scotian in Halifax was started in 1959 for completion in 1960.

Telex, the service which enables rapid printed communication between subscribers and which is operated jointly by the two railways, was extended to 12 additional cities. By the end of the year, the number of Telex subscribers had grown to 2,800.

One of Canada's greatest transport booms is in piggy-back service. Loadings of highway trailers increased 75 p.c. in 1959 over 1958 and the average of about 3,000 a week at the end of the year is still increasing.





Hamilton was the first Great Lakes port to provide its own port pilotage service with the opening of the Seaway. Here the pilot and the pilot boat are about to leave to meet an inbound overseas ship.

Shipping

Bounded on three sides by salt water and, along nearly half the fourth, by a deep-water inland lake and river system, Canada has always had a vital interest in shipping. Apart from foreign shipping, there is a tremendous fleet of smaller ships plying the coastal trade. In the interior, there are lakes and rivers which provide the only form of ground transportation to many remote, but important, areas. These bodies of water are frozen for many months of the year; water transportation in these areas, then, while statistically unimportant, is invested with an urgency less apparent where the water is open all year.

Except for the coastal trade, the waterways of Canada—the rivers, lakes and canals—are open on equal terms to the shipping of all nations, although most of the inland trade is carried in ships of Canadian registry. In 1958, 130,944 vessels, engaged in foreign or coastal trade, arrived at Canadian ports, compared with 139,431 in 1957 and 123,955 in 1956. The total tonnage of all cargoes loaded and unloaded in foreign trade during 1958 at Canadian ports amounted to 71,432,576, a drop from 87,913,595 in 1957. Of this tonnage, 21,324,322 or 30 p.c. was carried in vessels of Canadian registry.

Of the total waterborne foreign trade, 53.7 p.c. or 38,389,349 tons was with the United States and, of this traffic, Canadian vessels carried 54.8 p.c. In trade with other countries, however, Canadian vessels carried only 278,706 tons of a total of 33,043,227 tons. Most of the remainder was carried by vessels of the United States, the United Kingdom, Norway, Liberia, Panama, Germany, Sweden, Italy, Japan and the Netherlands.

Commodities exported from Canadian ports by vessel in 1958 amounted to 40,298,882 short tons, a decline of 18 p.c. from the 1957 total. Export shipments from the Atlantic and lower St. Lawrence River ports dropped 21 p.c. to 24,764,280 tons; from the Great Lakes and upper St. Lawrence River ports shipments were down 20 p.c. to 5,611,276 tons; while shipments from Pacific coast ports declined by 8 p.c. to 9,923,326 tons. The major commodities, in tons, exported by ship in 1958 included: iron ore, 13,423,965; wheat, 7,687,700; gypsum, 2,734,456; newsprint, 2,324,434; and lumber, 2,269,897.



Two ships are moored in the 80-ft. wide chamber of the St. Lambert Lock, the most easterly of the new Seaway locks. This lock, which overcomes a 15-ft. difference in water level, has a length of 768 feet and can be filled or emptied in less than five minutes.

Imports unloaded at Canadian ports were also lower than in 1957, dropping by 20 p.c. to 31,133,694 tons from 38,818,102 tons. Bituminous coal was down by almost five million tons to 10,545,955 from 15,540,066, iron ore declined to 3,552,989 tons from 4,689,651 and petroleum oils and products to 3,067,149 tons from 3,356,487. Also down were limestone, sand and gravel, iron and steel, and fertilizers. Among the commodities showing increases were crude petroleum, up to 3,539,416 tons from 3,368,292 in 1957, and corn, up to 460,494 tons from 192,009.

Canadian aids to navigation include adequate marking of dangerous areas by lighthouses and other marine signals, an efficient pilotage service, and radio-signal and direction-finding stations. Comprehensive federal legislation and regulations ensure a high standard of safety for navigation in Canadian waters.

Canals

The major canals in Canada are those of the St. Lawrence-Great Lakes waterway—the three new canals of the St. Lawrence Seaway, with their seven locks, providing navigation for vessels of 25-foot draught from Montreal to Lake Ontario; the Welland Ship Canal by-passing the Niagara River between Lake Ontario and Lake Erie with its eight locks; and the Sault Ste. Marie Canal and lock between Lake Huron and Lake Superior. These 16 locks overcome a drop of 580 feet from the Head of the Lakes to Montreal. The St. Lawrence Seaway was opened to navigation on April 25, 1959, and a new phase in the history of this waterway began. From Montreal to Lake Ontario the former bottleneck of narrow shallow canals and of slow passage through 22 locks has been overcome, giving faster and safer movement for larger vessels. The new locks and linking channels now accommodate all but the largest ocean-going vessels and the upper St. Lawrence and Great Lakes are open to 80 p.c. of the world's saltwater fleet. Only time will establish the value of this project, but it is certain to bring about a major change in the pattern of trade and the destiny of the Great Lakes area.

Subsidiary Canadian canals or branches include the St. Peters Canal between Bras d'Or Lakes and the Atlantic Ocean in Nova Scotia; the St. Ours and Chambly Canals on the Richelieu River, Québec; the Ste. Anne, Carillon and Grenville Canals on the Ottawa River; the Rideau Canal between the Ottawa River and Lake Ontario; and the Trent and Murray Canals between Lake Ontario and Georgian Bay in Ontario. The commercial value of these canals is not great but they are maintained to control water levels and permit the passage of small vessels and pleasure craft. The Canso Canal, completed in 1957, permits shipping to pass through the causeway connecting Cape Breton Island with the Nova Scotia mainland. During 1958, 35,096,587 tons of freight passed through all Canadian canals in 27,451 vessels.

The largest suction dredge in the world at work in the Beauharnois Canal. This dredge has removed as much as 75,000 cubic yards of material in 57 hours.





Vancouver's magnificent harbour boasts more than 100 piers, wharves and jetties and 31,440 ft. of berthing.

Harbours

A considerable part of the goods carried in Canada, both in domestic and international trade, use water facilities for some portion of their journey. The interchange of movement from land to water routes and vice versa is handled at many ports on the sea coasts and along the St. Lawrence-Great Lakes waterway all of which are well equipped with the necessary docks and wharves, warehouses, equipment for the handling of bulk freight, harbour railways, grain elevators, coal bunkers, oil storage tanks and dry docks.

Eight of the principal harbours are administered by the National Harbours Board, a crown corporation responsible to Parliament for their efficient operation. Seven other harbours are administered by commissions that include municipal as well as federal appointees and, in addition, there are about 300 public harbours, all of which are under the supervision of the Department of Transport. The harbours administered by the National Harbours Board are: Halifax and Saint John on the Atlantic seaboard; Chicoutimi on the Saguenay River, and Quebec, Three Rivers and Montreal on the St. Lawrence River in Quebec; Churchill on Hudson Bay; and Vancouver on the Pacific Coast. Most of these ports also have dock and handling facilities owned by private companies.

A large construction program is under way both by the National Harbours Board and by other administering agencies to keep Canadian harbour facilities in line with requirements. In particular, the ports on the St. Lawrence River and Great Lakes are preparing for an influx of larger shipping as a result of the completion of the Seaway project. New wharves and piers, grain elevators and warehousing and freight-handling equipment are being constructed or installed.

The freight movement through a large port includes that loaded and unloaded from sea-going vessels, the cargo handled by coastal vessels which is as large or larger, in-transit movement, and the movement from one point to another within the harbour. Figures for the ports reporting the highest tonnages in foreign and coastwise trade in 1958 are given in the following table.

**Foreign and Coastwise Trade through Ports Handling
over 2,500,000 Tons in 1958**

Port	Foreign		Coastwise		Total Freight Handled tons
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	
Montreal, Que.....	4,232,094	4,435,853	3,622,278	5,459,483	17,749,708
Vancouver, B.C.....	5,617,217	760,462	2,718,618	2,515,641	11,611,938
Sept Îles, Que.....	7,155,210	71,583	1,829,258	121,862	9,177,913
Port Arthur, Ont.....	1,551,072	200,766	5,387,441	187,061	7,326,340
Halifax, N.S.....	1,912,007	2,863,177	1,401,710	109,539	6,286,433
Hamilton, Ont.....	11,924	5,321,772	277,794	582,586	6,194,076
Toronto, Ont.....	123,236	2,026,925	622,467	1,633,797	4,406,425
Port Colborne, Ont.....	381,449	440,082	1,599,370	1,959,187	4,380,088
Quebec, Que.....	879,596	462,865	197,147	2,457,253	3,996,861
Fort William, Ont.....	420,487	279,075	2,728,243	457,032	3,884,837
Sault Ste. Marie, Ont.....	175,243	2,712,345	142,243	461,588	3,491,419
Prescott, Ont.....	2,824	288,277	1,447,302	1,702,099	3,440,502
Sydney, N.S.....	99,692	134,822	1,972,217	989,277	3,196,008
Sarnia, Ont.....	76,898	712,205	1,700,960	551,670	3,041,733
Port Alfred, Que.....	424,201	2,203,618	44,159	344,313	3,016,291
Contrecoeur, Que.....	1,166,677	18,165	177,744	1,596,241	2,958,827
Three Rivers, Que.....	740,287	271,820	27,644	1,663,208	2,702,959

Certain of these ports, such as Port Alfred, serve large industrial establishments rather than great aggregations of population and their cargoes are therefore limited mainly to the movement of such heavy bulk raw materials as iron ore, pulpwood or, as for Port Alfred, bauxite.

Airlines

Canada's continued growth and economic development, together with the additional facility requirements of the jet age, caused a marked increase in aviation activities throughout the country during 1959.

Substantial progress was made by the federal Department of Transport in planning, designing and constructing new air terminal buildings, airports, runways, improved navigation aids, air traffic control facilities and meteorological services. A major contract was substantially completed at Frobisher for the construction of living quarters, a four-room school, warehouses and an administration building. Plans progressed for new terminal facilities at Sault Ste. Marie, Ont.; Winnipeg, Man.; Edmonton, Alta.; Patricia Bay, Port Hardy and Prince Rupert, B.C.; and Inuvik and Frobisher, N.W.T. Projects were completed at 25 airports and started at 19.

Of the 452 commercial air carrier operating services in Canada, 277 were Canadian and 175 were foreign and Commonwealth. There were 4,547 registered aircraft, an increase of 510 over the previous year. The greatest increase was in the private category, a total of 2,513 being registered as compared with 2,091 the previous year. Of the 3,217 private pilots licensed, 2,455 were trained under the Department of Transport's assistance plan. Sixty schools and 39 flying clubs took part in this training program.

A Canadian Airworthiness Council was created to advise the Minister of Transport on aeronautical engineering, airworthiness, inspection, maintenance and certification of aircraft and related matters. Close liaison was maintained with the United States Federal Aviation Agency.

The bulk of Canada's freight and passenger air service is provided by the Trans-Canada Air Lines and the Canadian Pacific Air Lines. TCA, a publicly owned company, was created by Act of Parliament in 1937. At that time TCA's operations consisted of running a 122-mile route with a single aircraft. In 1959 its fleet consisted of 13 Super-Constellations, 49 Viscounts, 21 North Stars and 9 DC-3s and the first of its new DC-8 jetliners had been delivered. These 150-foot leviathans of the air have a cruising speed of 550 m.p.h. and will accommodate 127 passengers and 10,000 pounds of cargo. They will fly from Toronto to Winnipeg (1,300 air miles) in two hours and from Montreal to London (2,874 air miles) in six hours.

A scheduled transcontinental service was operated with all-cargo aircraft, each capable of carrying nine tons of commodities. Canadian shippers enjoy a high standard of service, being assured of next-day delivery to cities within a 1,500-mile radius and second-day delivery to points beyond. In providing general air carriage for first class mail in Canada, TCA, in co-operation with the Canadian Post Office Department, again contributed to one of the world's most expeditious mail delivery systems.

At the close of the year, TCA routes stretched 30,308 miles within North America and to the British Isles, continental Europe and the Caribbean, with 59 communities being directly served. Its staff numbered 10,452.

Anticipating the impact upon airline reservations procedures of the new speed and scale of air transportation, TCA undertook, in conjunction with Canadian electronic manufacturers, the design of an electronic and fully automatic reservations system. An order was placed for this equipment in 1959 and when it becomes operative in 1961 it will ensure almost instantaneous response to reservations requests and will reduce possibilities of error to an absolute minimum. It will be the most modern such system employed by the world's airlines.

Operations in 1959 resulted in a net income of \$152,554. Both total revenues and operating expenses increased by 12 p.c.

The Canadian Pacific Air Lines came into existence in 1942 as the result of the consolidation of a number of independent companies engaged in flying in Canada's northland. In 1949 this company was designated to provide trans-Pacific services on behalf of Canada and later it added other overseas routes until, today, it is one of the largest world carriers in terms of unduplicated route-miles. Its South Pacific service links Canada with New Zealand, Australia, Honolulu and Fiji, and a northern route extends to Japan and Hong Kong. Four flights a week cross the Arctic from Vancouver to Amsterdam, and an Atlantic service operates to Portugal and Spain. A South American network serves Mexico City, Lima, Santiago and Buenos Aires. In 1959 CPA was designated as the Canadian carrier to provide air service between Canada and Italy and, in March, 1960, it inaugurated two flights per week in each direction between Canada and Rome. It also began a Canadian transcontinental service between Vancouver and Montreal.

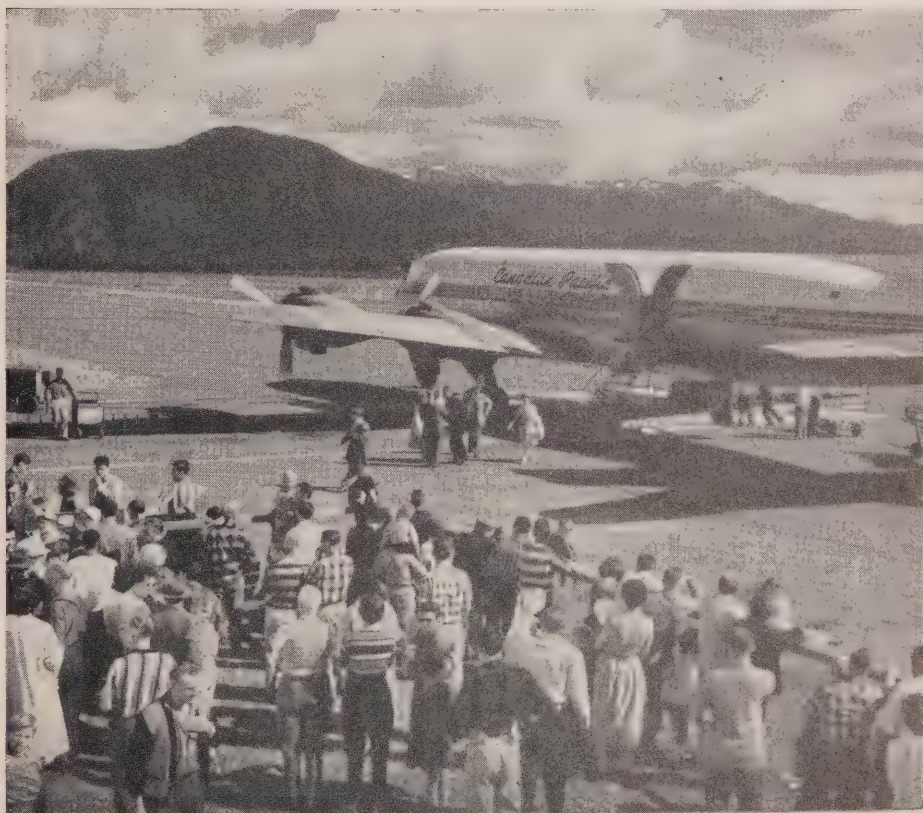
TCA's DC-8 in front of the new \$20,000,000 jet maintenance and overhaul base in Montreal.



New equipment placed in service in 1959 consisted of two Bristol Britannia turboprop aircraft. An order was placed for four DC-8 jetliners.

Though Canada's aviation spotlight tends to be directed on TCA and CPA, extensive scheduled service is provided by a number of smaller carriers—in the lower St. Lawrence area by Quebecair; in the Atlantic and Pacific Coast areas by Maritime Central Airways and Pacific Western Airlines, respectively; in northern Manitoba and western Ontario by Trans-Air of Winnipeg. Non-scheduled services are operated by most of the independent lines. They provide effective access to sections of Canada that are inaccessible by other means of transportation and act as feeders to the scheduled airlines. Their specialty services include recreational flying, aerial photography and surveying, aerial pest control and aerial advertising.

CPA's jet-prop Britannia at Calgary, Alta., the first Canadian jet-prop service to carry tourist class passengers.



Highways and Roads

Canada's road-building program is still on the increase. Since the end of the Second World War, governments at the three levels have spent approximately \$6,500,000,000 repairing, rebuilding and extending highways, roads and streets in an endeavour to meet the demands of motor traffic. Surfaced mileage, which stood at 131,000 miles in 1945, increased to 251,000 miles by the end of 1958. During that year alone \$773,000,000 was spent on highways and rural roads and \$164,000,000 on urban streets, sidewalks and bridges—a total of \$937,000,000.

The chief spending agencies are the provincial governments, which accounted for 68 p.c. of the total in 1958, including assistance to municipalities. Federal Government expenditure accounted for 11 p.c. and municipal and other agencies for the remainder.

Expenditures by the various levels of government and other agencies on highways, roads, bridges and streets for the years 1954 to 1958 were:—

<u>Agency</u>	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>
	(millions of dollars)				
Federal Government.....	34	37	60	72	99
Provincial Governments.....	366	449	543	564	641
Municipal Governments.....	117	134	161	175	194
Other.....	4	2	20	39	3
Totals.....	<u>521</u>	<u>622</u>	<u>784</u>	<u>850</u>	<u>937</u>

Each province has a major construction program under way and work on the Trans-Canada Highway was completed in Saskatchewan during 1959 and is nearing completion in several other provinces. Expenditure by the province of Ontario tops that of any other road-building agency and that of Quebec ranks second. City traffic congestion is being countered by changes in traffic arteries, skilful use of traffic control devices and channelling, and by the construction of expressways which are under way in Toronto, Montreal, Ottawa and Vancouver.

Federal Government expenditures on roads will show a decided increase over the next eight years as a result of the inauguration of the "Roads to Resources" project, whereby the Government of Canada will share with the provinces one-half the cost of building over 4,000 miles of roads into undeveloped and underdeveloped areas, involving an expenditure of \$150,000,000. The first project under this plan is a 255-mile road which will open up to development a large and comparatively inaccessible region of northwestern British Columbia. The Federal Government, in addition, has undertaken a seven-year \$100,000,000 program of road-building in the Yukon and Northwest Territories, also for the purpose of opening up resource-development areas. A road now under construction from the Mackenzie Highway around the west end of Great Slave Lake to Yellowknife should be ready for use by the autumn of 1960. Already completed is the 23.7 mile Fort Fitzgerald—Fort Smith road by-passing the rapids on the Slave River, which prevent through navigation between Waterways and the Arctic Ocean.



Commuters throng the Gardiner Expressway, along the western limits of Toronto's waterfront.

Motor Vehicles

Motor vehicle registrations continue to increase year by year reaching a record of 4,719,474 in 1958 compared with 4,497,091 in 1957. Of the total, 3,572,963 were passenger car registrations (one for every five Canadians), 1,112,638 were commercial vehicles (including 1,040,912 trucks, 15,181 buses and 56,545 other types) and 33,873 were motor cycles. Registrations in the different provinces were: Newfoundland 51,575; Prince Edward Island 25,504; Nova Scotia 164,954; New Brunswick 121,715; Quebec 968,058; Ontario 1,868,922; Manitoba 256,064; Saskatchewan 314,423; Alberta 430,081; British Columbia 510,893; and the Yukon and Northwest Territories 7,285.

Provincial revenues from motor vehicle registrations and licences also reached a new high at \$146,058,028, an increase of \$6,401,064 over 1957. Gasoline tax revenues rose to \$358,410,899 derived from the sale of 2,731,958,485 gal., most of which was consumed by motor vehicles.

The supply of new passenger vehicles in 1958 amounted to 384,682 cars, 4,465 fewer than in 1957. The 1958 total included 280,677 cars manufactured in Canada and 104,195 imported cars. The favour enjoyed by small or "compact" cars was reflected in the fact that they made up 55 p.c. of the total. During 1958, 376,723 passenger cars were sold, valued at \$1,110,724,000, as well as 68,046 trucks and buses valued at \$254,742,000.

In spite of an accelerated program of safety education and, in some provinces, increased penalties for dangerous driving, motor vehicle traffic accidents on Canada's streets and highways increased by 6.3 p.c. to 241,685 in 1959 from 227,451 in 1958. They took 3 p.c. more lives at 3,213 and injured 5.4 p.c. more persons at 84,374.

Motor Transport. The extension and improvement of Canadian highways and technical improvements in equipment have encouraged a continuous expansion in freight traffic on the roads. High-speed expressways and regular schedules operated by the carriers have vaulted the industry into a role of national importance.



Provision of parking space is a major consideration at such civic arenas as the Winnipeg Stadium.

Motor transport traffic surveys have been conducted in all provinces on a continuing basis since 1957 by means of random samples of vehicles selected from provincial registration records. Excluding vehicles which do not perform normal transportation services such as cranes, tow trucks, road building equipment, etc., the number of trucks and road tractors licensed in Canada during 1958 averaged 862,775. These vehicles travelled 6,610,000,000 miles for an average distance of 7,661 miles each and carried 459,966,000 tons of goods to perform 15,639,000,000 ton miles.

Trucks operating for hire averaged 50,541 or approximately 6 p.c. of the truck population in 1958. They travelled 1,300,000,000 miles or nearly 20 p.c. of the miles covered by transport trucks. Revenue earned by trucks for hire was \$631,000,000, an average of \$12,400 per vehicle and 6.8 cents per ton mile.

Scheduled and chartered intercity buses operated by the larger companies carried 48,827,212 passengers in 1959 compared with 50,034,888 in 1958. On the other hand their vehicle miles increased to 80,734,020 from 80,611,351 in 1958 and their operating revenues rose to \$39,996,121 from \$39,412,512. The average fare per passenger was 82 cents in 1959, indicating that short-distance travel was the mainstay of operation.

Urban Transit Services

Change marks the operations of urban passenger-transport services. The motor bus with its greater speed and manoeuvrability has almost completely replaced the electric railway. By the end of 1959 Toronto was the only city with street cars. The trolley bus, a transition vehicle between the electric car and the motor bus, is also losing favour. The much greater use of private motor vehicles within the towns and cities and to and from the newly developed

suburban areas has cut down tremendously the number of passengers carried in public conveyances. The transit services are at the same time faced with increasing costs of operation and much greater areas to service. Attempts to cover the added expenditure by higher fares or by diminished service have tended to defeat their own purpose.

In 1959 urban transit systems carried 1,050,232,992 passengers as compared with 1,080,091,178 in 1958, continuing the downward trend in evidence since 1949. However, it is noteworthy that during 1958 and 1959 in the larger centres, where traffic and parking problems are increasing, the passenger load remained fairly stable or actually increased, which may indicate a future trend. The Toronto system, the only one in Canada operating a subway, transported 35,869,394 passengers in 1959 compared with 35,932,278 in 1958. Transit systems operating in the larger urban areas are mostly municipally owned but in the smaller centres private ownership is more prevalent.

Pipelines

Oil- and gas-pipeline facilities grew steadily during the 1950's. Paralleling the exploitation of petroleum resources, which were being developed to serve fast-growing markets in Canada and the United States, oil-pipeline construction continued at an increasing rate until 1958, when the marketing of Canadian crude oil was well below production capacity. The result of this drop was an easing in oil-pipeline work, which has since been at a low level. By 1958, however, natural-gas resources in Alberta and, to a lesser extent, in British Columbia were well enough developed to supply major markets beyond the borders of the main producing provinces. Thus, when oil-pipeline construction was declining, extensive programs for the building of natural-gas pipelines were just getting under way. The result of pipeline work carried out during the decade is that major oil and natural-gas pipelines stretch from within the producing areas to markets across most of the country. Vast networks of gathering and feeder lines supply the trunk lines, and at the other end distribution lines for petroleum products and natural gas place both commodities where they are required.

Whirlybirds of the bush country return to Vancouver airport for winter hibernation.





Part of the third pipeline to carry natural gas into Greater Vancouver from the main transmission line in the Fraser Valley goes under water, encased in concrete and buried in a 15-ft. trench on the river bottom.

Gas Pipelines. The two main components of Canada's gas-transportation facilities are the lines of Westcoast Transmission Company Limited and Trans-Canada Pipe Lines Limited.

Westcoast's system collects natural gas in the northeastern region of British Columbia and the adjacent region of Alberta. The gas is transported via a 30-inch, 605-mile pipeline originating at Taylor, British Columbia, where the Alaska Highway crosses the Peace River, and ending east of Vancouver where a lateral line runs across the United States border. The Westcoast line serves two main distribution companies in the province: Inland Natural Gas Company Limited and British Columbia Electric Company Limited. Inland serves the lower, inland region of the province while British Columbia Electric serves the Greater Vancouver area.

Trans-Canada's gas pipeline is the longest in the world: it stretches for 2,290 miles, from the Alberta-Saskatchewan border to Montreal. From the receiving terminal to Winnipeg the line is 34 inches in diameter. From Winnipeg to Toronto via northern Ontario, the line is 30 inches in diameter, and from Toronto to Montreal it is 20 inches. This company does not gather its gas but is served by Alberta Gas Trunk Lines Limited, which gathers the gas from many fields within Alberta and delivers it to Trans-Canada at Burstall, Saskatchewan. Trans-Canada serves distribution companies in Saskatchewan, Manitoba, Ontario and Quebec. The main distribution companies served are the Saskatchewan Power Corporation, Greater Winnipeg Gas Company, Northern Ontario Natural Gas Co. Ltd., The Consumers' Gas Company and Union Gas Company of Canada Limited.

During 1959 the construction of additional gas pipelines continued as the major development in all pipeline construction, but it was below the record level of 1958 by about one third. Most pipeline work was done in the western

provinces, where approximately 1,600 miles of gathering, transmission and distribution lines were laid. In the East, where the installations were essentially all distribution lines, 1,100 miles were laid. The additional construction brought the total of natural-gas-pipeline mileage in Canada to more than 28,400 miles. Utility companies' sales of natural gas in 1959 totalled 282,358,928 Mcf* valued at \$159,627,745. In 1958 utility companies sold 206,022,355 Mcf of natural gas valued at \$114,946,088. At the end of 1959 natural-gas customers totalled 1,062,976.

Oil Pipelines. The principal components of Canada's oil-pipeline system are the lines of Interprovincial Pipe Line Company, which carry crude oil from Edmonton eastward as far as Toronto, and of Trans Mountain Oil Pipe Line Company, which carry crude oil westward from Edmonton to Vancouver and the United States.

Interprovincial has two complete pipelines from Edmonton to Superior, Wisconsin, at the head of Lake Superior. They connect with a larger line, 30 inches in diameter, from that point to Sarnia, Ontario, and a 20-inch line from Sarnia to the Toronto area. The company receives crude oil from six pipelines in Alberta, two in Saskatchewan and two in Manitoba in addition to that from its own line in Alberta, which originates in the Redwater field and runs to Edmonton, where it also connects with Trans Mountain Oil Pipe Line. Interprovincial makes deliveries to two pipelines in Saskatchewan, two in Manitoba and three in the United States. The Interprovincial system, either directly or in conjunction with its connecting carriers, transports western Canadian crude oil to refineries located as follows: Saskatchewan—Saskatoon, Moose Jaw and Regina; Manitoba—Brandon and Winnipeg; Minnesota—the St. Paul-Minneapolis area and Wrenshall; Wisconsin—Superior; Michigan—West Branch, Bay City and Midland; and Ontario—Sarnia, Clarkson and Port Credit.

The Trans Mountain pipeline runs from Edmonton to Vancouver and to the Puget Sound area of the State of Washington. It receives Alberta crude oil from seven pipelines in that province and is connected to refineries located at Kamloops and Vancouver in British Columbia, and Ferndale and Anacortes in Washington.

Except for the completion of one new pipeline from the Swan Hills area to Edmonton, built by Federated Pipe Lines Limited mostly in 1958, there was very little oil pipeline construction in 1959. Most was for extensions to gathering systems. In addition a 6-inch condensate line was constructed from the Windfall field to the Trans Mountain pipeline pump station near Edson. At the end of 1959 there were more than 7,500 miles of oil lines in Canada.

Net deliveries of crude oil in 1958 amounted to 308,454,005 barrels, thus setting a new record.

Communications

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph and radio services, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change

*Mcf = 1,000 cubic feet.



For the seventh consecutive year, Canadians hold the world's telephoning crown with an average of 511 calls per person during the year. Density of telephones in Toronto of 49 for every 100 persons compares with world density of four per 100. A multi-button business telephone introduced in 1959 enables executives to connect with many other phones simultaneously. In some places it is possible to telephone without leaving your car.

and development. The familiar challenges of the country—its size, its topography, its climate, its small population—have been met with such success that today Canada possesses communication facilities and service second to none in the world.

Telecommunications

Many telephone systems provide service across the nation; they number more than 2,600 and range in size from large shareholder-owned companies to small co-operative systems in the rural districts. The privately owned Bell Telephone Company of Canada, operating throughout the greater part of Ontario and Quebec, serves 61.4 p.c. of all telephones in the country. The British Columbia Telephone Company, also shareholder-owned, serves 9.4 p.c. of the total. Four private companies cover the Atlantic Provinces and three provincially owned systems serve the Prairie Provinces.

Canadian use of telephone service runs at a high level. During the past ten years the number of telephones has more than doubled to 5,118,293—one for every 3.3 persons. The estimated number of calls on all systems in 1958 was 8,707,641,000, representing an average of 1,701 calls per telephone and 511

calls per person. Long distance calls accounted for 194,185,543 of the total, most of them to points in Canada or between Canada and the United States. Long distance service makes possible the interconnection of practically any telephone across the country with any other; also with telephones in the United States and in most parts of the world. In Canada, long distance service is provided by the separate systems within the territories they serve and, on a nation-wide basis, by the Trans-Canada Telephone System, an organization of the major telephone companies.

Improvement and extension of local and long distance service continues to absorb the bulk of invested money and labour. At the same time, with the growth of the economy and its northward-reaching tendencies, Canadian telephone companies are being called upon to supply communications to many new and important centres of development. In 1958 a radio relay system was completed which links Goose Bay, Labrador, and the iron-ore area of the Quebec-Labrador border with Quebec City. A branch of this system, built in 1959, extended long distance service to the new mining settlement at Gagnonville, Quebec. Canada's most northern exchange, at Frobisher Bay on Baffin Island, was opened in 1959.

About 82 p.c. of all telephones in Canada are now dial operated and equipped for automatic completion of local calls. Customer dialing of long distance calls—Direct Distance Dialing—has been in effect for some time in the Toronto, Windsor and Guelph areas in Ontario. In 1960 it will be introduced in Montreal and Valleyfield in Quebec, and in Cornwall, London and St. Thomas in Ontario. A long-range international plan, developed by the telephone companies of Canada and the United States, will eventually allow most telephone users on the North American continent to dial long distance calls direct.

The world's longest single microwave radio relay network, which spans Canada from coast to coast, has now been in operation for two years. Capable

In this mammoth manhole a workman arranges telephone cable under city streets.



of carrying more than 2,400 long distance conversations and two television programs at the same time, it is already being expanded to enable telephone companies throughout Canada to keep abreast of the increased demand for their long distance services. In 1959 the circuit-carrying capacity of the existing system was increased between Quebec City and Montreal, and between Sudbury and Sault Ste. Marie; and network television was brought to Rouyn and Kenora.

Numerous flexible services are provided by Canadian telephone companies for business and industry. Special conference circuits can be quickly arranged. Data transmission and processing facilities allow rapid exchange of coded and printed information between plants, warehouses, retail outlets and many other business and industrial locations. Telephoto and facsimile provide photographic copy direct from the originator. Radio installations link the traveller with the regular telephone network, giving mobile service to such users as highway departments, trucking and construction firms, fire and ambulance services, police departments and oil pipeline companies.

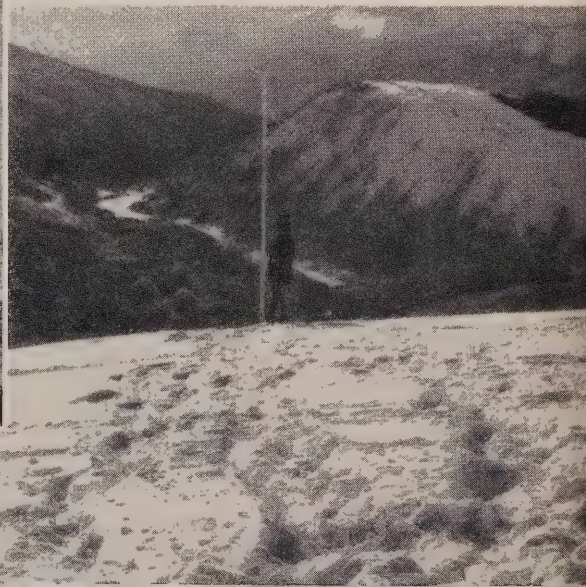
Nation-wide teletype and leased-wire telegraph services are available through the facilities of the member companies of the Trans-Canada Telephone System. The two major railways provide similar services as well as message telegraph services throughout Canada.



The completion of a microwave network links Newfoundland with the rest of Canada.



Construction has started on another major microwave system to extend 1,200 miles from Grande Prairie, Alta., to the Yukon-Alaska border and thereby greatly improve telephone communication in northwestern Canada.

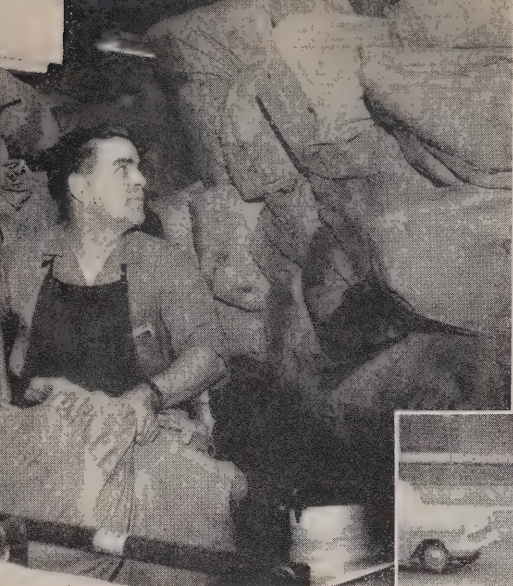


The Pacific Great Eastern Railway, cutting diagonally across the mountains of British Columbia from Vancouver northeastward to Fort St. John, is the first major railway in the world to use microwave telephone and teletype communications for all its operations. By merely lifting a receiver, an official in Vancouver may speak to the conductor on a train speeding anywhere along the line.



The Canadian Overseas Telecommunication Corporation, a Crown agency, is responsible for most overseas communications. Working in conjunction with other international telephone agencies, COTC maintains channels of communication to a number of European countries by way of undersea cable and shortwave radio. The world's first transatlantic telephone cable, completed in 1956, which COTC shares with British and United States telephone systems, will be supplemented in 1961 by a Canadian-British cable, the initial step in a long-term plan to bring about a world-wide Commonwealth cable system. At present, trans-pacific telephone traffic is handled through a radio link between Vancouver, Australia and Japan; a cable system is being planned.

Ship-to-shore communication on the East Coast, the St. Lawrence River and the Great Lakes is handled by the Federal Government. On the Pacific Coast the North-West Telephone Company operates one of the most extensive radio telephone networks in the world. The radio beams of its northern stations reach out to the Arctic Circle.



A small part of the nearly four billion pieces of mail handled by the Canadian Post Office in 1959.

Five of the six mailmobiles put into service in 1959 in scattered settlements in the Fraser Valley, B.C. A cross between a motorcycle and a small delivery van, each mailmobile can carry a quarter ton of mail and runs up to 60 miles per gallon of gasoline.



Postal Service

The exchange of Canadian mails, both at home and with correspondents in other countries, is a task requiring a tremendous effort to ensure that efficient operation is maintained.

Two great systems are involved in the handling of mail: one is the chain of post offices which deals directly with the public and the other is the vast transportation scheme that links the post offices. Co-ordination between the two elements is controlled by a relatively small staff at the Post Office Headquarters at Ottawa.

During 1959, more than 50,000 employees, in 11,634 post offices across the nation, handled a record volume of 3,802,000,000 items of mail. Considering that 30 different handlings are required to deliver one article from sender to addressee, it can be seen that more than 114,000,000,000 different handling operations are carried out by the postal service each year.

In this sprawling country, speed in the transportation of mail is essential. Through the use of every possible means of transportation available, a fast and dependable service is provided.

Most of the domestic first class mail is carried by the two major Canadian airlines, and by the two major railroads. A service started in 1954 provides air

transport of all domestic first class mail, provided such items are not heavier than eight ounces. This means a considerable saving in time, particularly on cross-country mailings. Air mail service is also provided at a moderate rate for articles over the eight ounce limit as well as for parcels. Other mail is carried by a great network of railway, highway and water services. In a few remote regions of the Eastern Arctic, where regular service is not available, the mail is carried by air flights provided by the Royal Canadian Air Force and private courtesy flights, air stage services and Royal Canadian Mounted Police patrols.

To meet public demand the Post Office Department also provides additional services which facilitate operations in the field of Canadian business. These are the money order service, C.O.D. service, registration and the Post Office Savings Bank.

Every day of the year, the Post Office Department issues more than 147,000 money orders at an average value of approximately \$15 each.

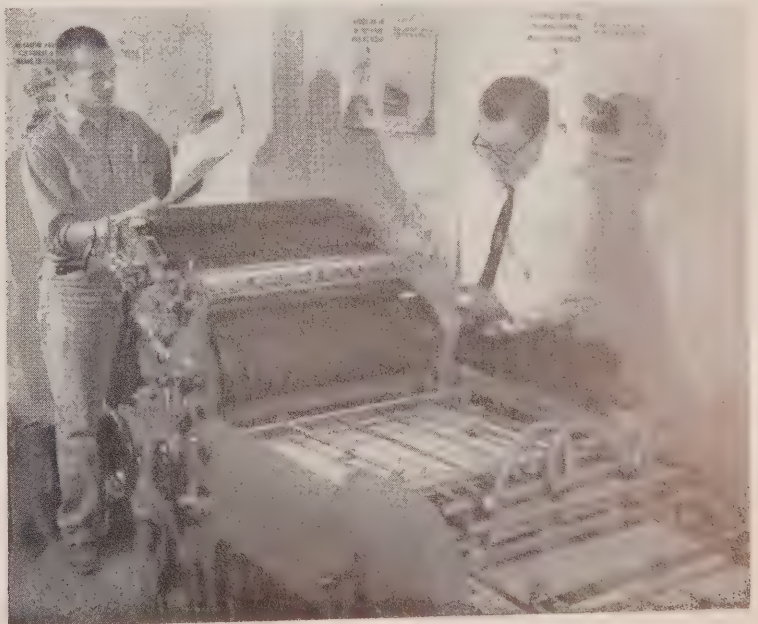
As an aid to Canadian business, the Post Office Department operates an efficient C.O.D. service, whereby merchandisers can dispose of their goods on a cash basis. The service charge is paid by the recipient.

The Post Office Savings Bank, established in 1867, is operated for the promotion of personal savings. Personal, joint, trust and other types of accounts may be opened. More than 300,000 accounts are now active.

In recent years, new facilities have been devised for the convenience of the public. Improvements were made in the revision of delivery regulations. New "snorkel type" mail boxes have been installed. The increased use of group mail boxes, and extended rural mail delivery have also contributed to better public service.

The ever increasing volume of mail has made it necessary for the Post Office Department to develop the use of modern methods of handling and modern equipment. Electro-mechanical sorters, self-service stamp vending machines, punch-card sorters used in the financial transactions, and many other devices help the Department to keep pace with the modern trend of Canadian business.

The fourth estate is nowhere more important than in an isolated mining town. The Murdochville (Que.) Voyageur gives the townspeople the weekly news.



The Press

The press of Canada and particularly Canadian newspapers—supplemented by the newer media of communications, radio and television—have built over the years a proud tradition of honest and objective reporting and of vigorous and forthright criticism of both national and international affairs as seen increasingly through Canadian eyes. Indeed, the free enterprise press of Canada constitutes one of the most effective generators of an active and intelligent public interest in the nation's business, a staunch guardian of Canadian democratic rights and principles, and a basic medium of expression in the cultural life of the nation.

By reason of Canada's vast area and its relatively low density of population, daily and weekly newspapers circulate largely on a regional basis, although in a land well served by speedy air and rail transportation a number of metropolitan newspapers in such centres as Toronto, Montreal, Quebec, Winnipeg and Vancouver enjoy almost nation-wide influence. Every publishing day, 113 Canadian daily newspapers, counting morning and evening editions separately, appear on the streets, of which 95 are in English, 12 in French and the remainder in other languages. Total circulation is over 4,000,000. A fair number of these papers have been established for over a century; twelve of them have circulations in excess of 100,000 and account for more than half of all papers sold. Most of this newspaper circulation is in urban centres, the rural areas being more adequately served by weekly or monthly publications that cater to their particular interests. Included in the latter group in 1959 were many of the 91 foreign-language papers published in Canada to serve the recent immigrants from Central and Eastern Europe.

Magazines and periodicals also enjoy a large circulation. In 1959, 766 periodicals, ranging widely in topic from arts, sports and religion to construction, had a circulation in excess of 17,842,000.

Behind the newspapers lie two great news-gathering organizations, the Canadian Press and the British United Press. The CP, a co-operative venture formed in 1917, is owned and operated by the Canadian newspapers. It collects and delivers news and photographs of interest to newspapers and radio stations throughout the nation, and transmits items of world-wide interest through reciprocal arrangements with Reuters, the British agency, and the Associated Press, the United States co-operative. Attaining its more modern structure in 1923, it is, in practice, a venture for exchanging news among its 100 daily newspaper members, and the costs are shared by almost all dailies in relation to the populations of the cities served.

The other service, British United Press, is a limited company in Canada and maintains a close association with the United Press International, of which it is an affiliate. From its headquarters in Montreal and its 12 Canadian bureaus, it serves directly (1960) North America, South America, Europe and Australia with news from Canada as well as 185 subscribers including 58 private broadcasting stations in Canada. Of the world news agencies, Agence France Presse maintains offices in Montreal and Ottawa. Also, some foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

On a big daily newspaper, the news room is a highly organized hive of activity, day and night. More than 4,000,000 newspapers are printed every day in Canada.



Advertising is news, too, and many advertisers use only this means of reaching customers.



Daily newspapers alone contribute about 73 p.c. of the revenue received from Canadian periodical publications, totalling about \$284,000,000 yearly, of which amount \$208,000,000 is realized from advertising and \$76,000,000 from sales. Printed and bound books were produced to the value of \$40,000,000 although less than half of that was classed as reading matter—the remainder being catalogues and other advertising material. Recorded imports of books and other printed matter greatly exceeded exports, the former amounting to \$96,881,000 in 1959, and the latter \$4,891,000.

Newsprint used by the publishing and printing industries was valued at \$62,400,000 in 1958, and book paper, used mostly in magazines, at \$27,000,000. The trade employed nearly 31,000 people whose salaries and wages amounted to \$128,000,000.



The trading floor of the Winnipeg Grain Exchange, one of the most important trading centres of its kind in the world.

Domestic Trade

Domestic trade is that part of a country's business life concerned with the distribution of goods and services. Many kinds of business organizations are engaged in this activity. Wholesale houses, retail stores, hotels, theatres, transportation firms, banks, insurance companies and storage warehouses all perform functions which make it possible for raw materials needed by industries, household merchandise and services of various kinds to be distributed within the country.

In conjunction with Canada's decennial census of population, a detailed study is made of business firms most closely connected with domestic trade. The next such study is being undertaken in 1961 while less comprehensive surveys are made from time to time.

Much wholesale business is done by firms whose principal activity is not wholesaling. As retail organizations increase in size, it becomes necessary for them to buy merchandise in larger quantities. Consequently, some retail firms have found it profitable to undertake many of the functions formerly belonging only to wholesalers. Some manufacturers also have extended their operations into the wholesale field, as, for example, when the product being sold is a complicated machine requiring installation and maintenance services by factory trained, expert technicians.

In retail trade, chain stores continue to hold an important place, especially in certain trades. Even in total, they have shown remarkable changes during the past twenty years. In 1938 their sales amounted to \$414,448,300, approximately 16 p.c. of total trade; in 1958 their sales were \$3,073,147,000, accounting for 20 p.c. of total sales. The greatest strides were made by food chains which accounted for 28 p.c. of total sales in the grocery and combination trade in 1938 compared with 44 p.c. in 1958. During these 20 years the sales in an

While the large city hotels serve the business public, the holiday traveller generally prefers the informality and convenience of the motel, such as this one in New Brunswick.



average chain food store increased from \$56,342 a year to \$336,900. It has been estimated that voluntary group chains add 25 p.c. more to the corporate chains' 44 p.c. share, leaving independent grocery stores only 31 p.c. of total sales.

A more recent development in merchandising has been the shopping centre. Over the relatively short period from 1956 to 1958 there has been a remarkable growth from 64 centres with sales of \$235,928,222 to 125 centres with sales of \$468,448,337.

Hotels make up one of the largest service industries in Canada, receipts of hotels having risen from \$357,000,000 in 1951 to \$480,000,000 in 1958. These amounts do not include the business of motels and cabin courts which has grown very rapidly in the same period. Motion picture theatres are another important service industry. In 1958 there were 1,622 regular auditorium type theatres and 232 drive-in theatres with 146,483,000 total admissions during the year as against 1,808 regular theatres and 82 drive-in theatres with 245,687,000 admissions in 1951, when television sets were still a novelty.

A popular resort hotel at Harrison's Hot Springs, B.C.





The 1960 Canadian Hardware Show displayed 16,000 different items, ranging from electric can openers to sausage stuffers, intended for the well-stocked hardware store. Manufacturers' shows, held annually, keep retail dealers in touch with new goods produced for the consumer market.

Wholesale Statistics. Only one section of wholesale trade is surveyed on a current basis; this covers wholesale merchants who take title to goods they sell and generally perform the function of warehousing and delivery. Estimates of wholesale sales, obtained by the use of sampling techniques, are given for 1955-59 in the following table.

Estimates of Wholesale Sales, 1955-59

Kind of Business	1955	1956	1957	1958	1959 ¹
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Fresh fruits and vegetables.....	224.4	230.2	228.2	252.7	261.5
Groceries and food specialties....	1,046.9	1,117.2	1,215.2	1,328.3	1,447.3
Meat and dairy products.....	133.9	141.4	146.0	167.8	160.4
Clothing and furnishings.....	84.8	84.0	80.9	81.7	85.1
Footwear.....	28.8	28.9	27.9	29.9	32.0
Textile and clothing accessories..	182.6	196.3	197.1	210.5	213.4
Drugs and drug sundries.....	164.6	176.9	187.7	202.2	219.1
Household electrical appliances..	164.4	163.0	159.5	164.5	176.8
Farm machinery.....	60.2	72.1	60.3	73.4	90.4
Coal and coke.....	148.0	171.0	162.0	139.4	131.3
Hardware.....	280.1	310.2	303.8	295.5	307.0
Construction materials, etc.....	704.8	760.3	732.8	770.6	798.8
Industrial and transportation equipment and supplies.....	561.6	742.2	721.4	621.7	681.9
Commercial, institutional and service equipment and supplies	89.8	102.9	102.7	106.6	122.3
Automotive parts and accessories	302.7	338.0	342.1	363.8	397.8
Newsprint, paper and products...	240.5	264.3	265.0	257.3	270.7
Tobacco, confectionery and soft drinks.....	473.3	509.0	544.6	572.9	610.3
All other.....	1,725.2	2,076.7	1,989.3	2,004.7	2,249.6
Totals.....	6,616.6	7,484.6	7,466.5	7,643.5	8,255.7

¹ Preliminary.

Retail Statistics. Estimated retail sales totalled \$16,149,300,000 in 1959, an amount 4.6 p.c. higher than the 1958 figure. Motor vehicle dealers recovered their loss of the previous year with a gain of 8.6 p.c. over 1958. Gains were registered in all trades and in all provinces.

Retail Store Sales by Type of Business and by Province, 1957-59

Type of Business and Province	Sales			Percentage Change 1958-59
	1957	1958	1959 ¹	
Type of Business	\$'000,000	\$'000,000	\$'000,000	
Grocery and combination stores.....	2,894.4	3,125.9	3,256.1	+4.2
Other food and beverage stores.....	1,081.5	1,119.7	1,158.2	+3.4
General stores.....	595.5	624.7	640.9	+2.6
Department stores.....	1,281.8	1,345.3	1,420.3	+5.6
Variety stores.....	295.8	315.1	331.8	+5.3
Motor vehicle dealers.....	2,483.4	2,413.6	2,620.2	+8.6
Garages and filling stations.....	939.2	1,036.7	1,043.6	+0.7
Men's clothing stores.....	235.4	237.6	246.0	+3.5
Family clothing stores.....	217.7	226.6	232.1	+2.4
Women's clothing stores.....	257.0	264.9	273.4	+3.2
Shoe stores.....	136.3	146.3	154.6	+5.7
Hardware stores.....	302.4	317.8	323.8	+1.9
Lumber and building material dealers.....	457.8	481.6	505.7	+5.0
Furniture, radio and appliance stores.....	567.3	565.8	582.0	+2.9
Restaurants.....	527.6	542.8	549.7	+1.3
Fuel dealers.....	321.7	326.3	342.3	+4.9
Drug stores.....	357.6	382.7	404.3	+5.6
All other stores.....	1,874.2	1,970.8	2,064.5	+4.8
Totals.....	14,826.4	15,444.3	16,149.3	+4.6
Province				
Atlantic Provinces.....	1,233.9	1,290.1	1,358.2	+5.3
Quebec.....	3,521.4	3,646.7	3,792.8	+4.0
Ontario.....	5,663.4	5,934.4	6,224.8	+4.9
Manitoba.....	725.8	753.6	811.5	+7.7
Saskatchewan.....	854.8	913.5	941.7	+3.1
Alberta.....	1,211.0	1,274.8	1,328.3	+4.2
British Columbia (incl. Yukon and N.W.T.)..	1,616.1	1,631.2	1,691.7	+3.7

¹ Preliminary.



Canadian women bought \$273,000,000 worth of clothes in 1959. Extremes of summer and winter climate in most of Canada make heavy demands on the family clothing budget.



Food chain stores continue to squeeze out the small independent grocer. With the nation's grocery bill standing at \$4,414,000,000 in 1959, food sales far outstrip those of any other retail commodity.

Statistics for chain stores are shown in the following table; figures for 1958 are the latest available. These stores, including all those operating four or more retail outlets, accounted for approximately 20 p.c. of the total retail business in Canada.

Chain Store Statistics, 1953-58

Year	Stores	Retail Sales	Salaries of Store Employees	Stocks on Hand End of Year		Accounts Outstanding End of Year
				Store	Warehouse	
	Av. No.	\$'000	\$'000	\$'000	\$'000	\$'000
1953.....	7,835	2,048,228	171,167	179,704	52,096	91,538
1954.....	8,136	2,146,635	181,509	191,049	57,814	102,747
1955.....	8,274	2,353,955	199,611	205,833	63,120	127,362
1956.....	8,559	2,647,055	221,136	232,392	72,183	143,357
1957.....	8,822	2,841,569	242,979	248,284	78,521	148,506
1958.....	9,122	3,073,147	262,456	265,862	78,512	158,232

Sales of new passenger cars reached an all-time high during 1959 with 421,232 units sold for a total of \$1,233,404,000. The financing of new passenger vehicle sales by sales finance companies covered 37.4 p.c. of new car sales in 1958, the lowest proportion to date.

New Passenger Car Sales and Financing, 1953-59

Year	Sold		Financed		P.C. of Total Sales Financed	
	No.	Retail Value	No.	Retail Value	No.	Value
		\$'000		\$'000		
1953.....	359,172	899,726	146,431	252,160	40.8	28.0
1954.....	310,546	797,554	126,099	230,900	40.6	29.0
1955.....	386,962	1,023,351	156,191	305,069	40.4	29.8
1956.....	408,233	1,128,640	190,109	408,993	46.6	36.2
1957.....	382,023	1,087,620	171,904	385,043	45.0	35.4
1958.....	376,723	1,110,724	146,418	332,978	38.9	30.0
1959 ¹	421,232	1,233,404	157,507	370,452	37.4	30.0

¹ Preliminary.

The shopping centre, with a carefully selected variety of stores and with ample free parking-space, is winning retail customers away from downtown stores. In new communities, the shopping centre may be built before a "main street" has had a chance to develop.



Consumer Credit. Credit has become an integral part of the distribution of goods and services and of the buying habits of a large percentage of Canadians. The extension of credit to consumers, even as the extension of credit to business men, is the quickest means by which they can expand their assets. It is, in effect, a form of compulsory saving and an important stimulus to industry.

Whether or not the securing of easy credit is an advantage to the individual, the fact remains that the amount of consumer debt increased more than 500 p.c. in the period 1946 to 1958, while retail sales, the source of most of this credit, increased only 150 p.c. The following figures of credit outstanding do not include real estate credit or other avenues of credit such as that given by service trades, professionals, loans between individuals, etc.

Consumer Credit Outstanding (estimates of selected items), 1953-59

Date	Charge Accounts	Instalment Credit			Cash Personal Loans ¹	Total Selected Items
		Retail Dealers	Finance and Loan Companies	Total		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1953—Dec. 31.....	339	284	520	804	489	1,632
1954— "	363	322	497	819	568	1,750
1955— "	374	377	605	982	722	2,078
1956— "	389	409	769	1,178	789	2,356
1957— "	382	444	795	1,239	781	2,402
1958—Mar. 31.....	339	414	763	1,177	794	2,310
June 30.....	348	418	797	1,215	852	2,415
Sept. 30.....	328	451	818	1,269	986	2,583
Dec. 31.....	371	490	787	1,277	947	2,595
1959—Mar. 31.....	330	456	766	1,222	1,006	2,558
June 30.....	332	458	818	1,276	1,126	2,734

¹ Exclusive of loans extended by credit unions.



Foxes were the first fur-bearing animals to be raised in captivity on a commercial scale, but in 1951 mink accounted for 92 p.c. of the total fur-bearing animals on farms and chinchilla for 7 p.c. While furs have declined in use with the development of synthetics, fur stoles and scarves are still popular luxury items.



⌂ In 1960, for the first time, Canadian stores stocked mass-produced clothes adapted from original designs of members of the Association of Canadian Couturiers.

Fashion shows present shoes of Canadian design and manufacture. ➡



Prices

Wholesale Prices. The general wholesale index was virtually unchanged during 1959 and stood at 229.8 in December, as compared to 229.3 a year earlier. Annual average price levels in 1959 were slightly higher however, as a result of minor gains recorded between October 1958 and February 1959.

The upward movement which occurred during the latter half of 1958 in the chemical products group continued, as this index rose a further 2.0 p.c. from 184.5 to 188.1 in the twelve-month period ending in December 1959. Soaps and detergents, tanning materials, and prepared paints were the chief contributors to the increase. Higher prices for fir and cedar between December 1958 and February 1959 caused the wood products group to rise sharply and it held steady for the remainder of the year to stand at 303.9 in December, an increase of 1.8 p.c. over the corresponding month a year earlier. The non-ferrous metals group increased by 1.8 p.c. during the year, from 172.7 to 175.8, mainly on the strength of higher prices for copper and zinc and their products. The vegetable products group fluctuated mildly during the year to arrive at 200.2 in December, an increase of 1.2 p.c. over the December 1958 index of 197.9. Slight advances in the textile products group in the first six months of 1959 were partially offset by lower prices in the last half of the year, restricting the index to an overall increase of less than 1.0 p.c. between December 1958 and December 1959. Negligible changes occurred in the iron products group during the course of 1959.

From early 1959 sporadic increases occurred in the animal products group until September, when the index dropped sharply from 258.6 to 247.4 at the year's end. Lower prices for hides and skins, leather, livestock, fresh and cured meats, and eggs contributed substantially to the downward movement in this index which is now lower by 3.0 p.c. than the December 1958 index of 255.2. The non-metallic minerals group, reacting to lower prices for coal and petroleum products, declined between March and June, but remained fairly stable throughout the balance of the year to stand at 185.9 in December, down 1.5 p.c. from the previous December's index of 188.8.

Annual and Monthly General Wholesale and Special-Purpose Price Indexes, 1953-59

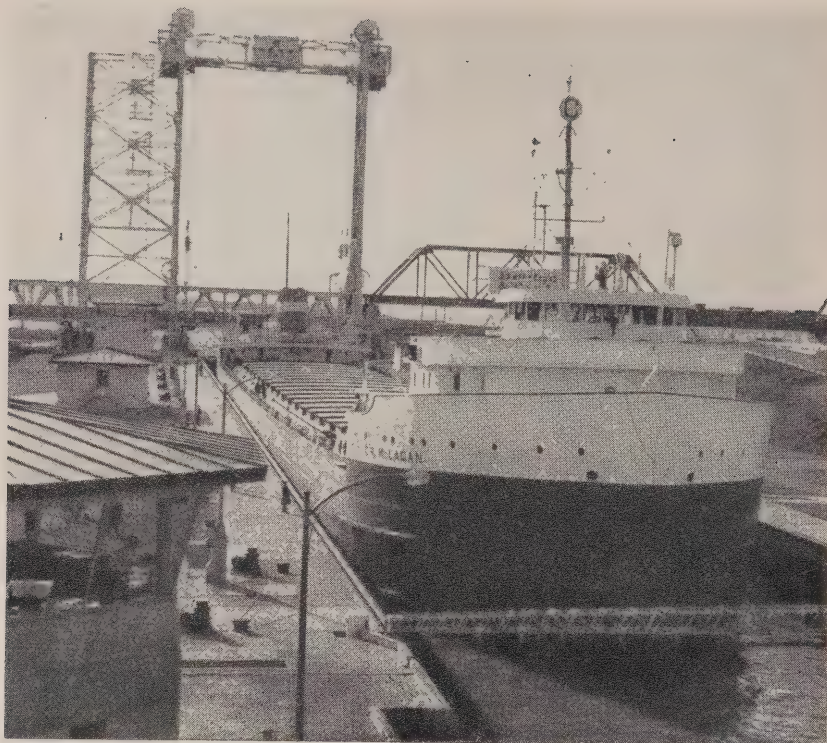
(1935-39 = 100)

NOTE.—All 1959 indexes and Canadian farm products indexes subsequent to July 1958 are subject to revision.

Year or Month	General Wholesale Prices	Raw and Partly Manufactured	Fully and Chiefly Manufactured	Canadian Farm Products	Residential Building Materials	Non-residential Building Materials (1949 = 100)
1953.....	220.7	207.0	228.8	221.6	282.6	124.4
1954.....	217.0	204.8	224.2	213.6	277.5	121.8
1955.....	218.9	209.7	224.5	212.6	283.4	123.4
1956.....	225.6	215.8	231.5	214.2	292.9	128.0
1957.....	227.4	209.4	237.9	213.6	292.8	130.0
1958.....	227.8	209.3	238.3	221.6	290.2	129.8
1959.....	230.6	210.8	241.7	219.4	296.2	131.7
1959—January.....	229.7	210.5	240.6	220.7	293.1	131.2
February.....	230.8	212.1	241.3	217.9	293.7	131.3
March.....	230.8	212.0	241.1	215.5	295.9	131.7
April.....	231.2	211.8	241.9	216.8	296.7	132.1
May.....	231.2	212.3	242.0	221.9	298.1	131.9
June.....	230.7	211.6	241.6	224.9	297.6	131.9
July.....	231.0	211.6	242.1	225.8	297.9	131.8
August.....	230.8	211.1	242.2	222.0	297.6	131.8
September.....	230.9	210.5	242.5	219.1	296.8	131.9
October.....	230.1	208.4	242.3	215.5	295.7	131.5
November.....	230.3	210.2	241.6	217.2	294.8	131.6
December....	229.8	208.2	241.6	215.0	295.9	132.1



Distinctive Eskimo carvings are becoming a much sought after luxury item. The encouragement given to this art by the Federal Government has resulted in quality and price protection and in increasing availability throughout Canada.



A shipment of nearly 1,074,000 bu. of prairie grain is eased through the St. Lambert lock of the St. Lawrence Seaway. It represents the produce of 31,000 acres of western Canadian farmland and is destined for consumption in Quebec.

Retail Prices. The consumer price index is Canada's official measure of retail price change and is defined as measuring the average percentage change in retail prices of goods and services bought by a large and representative group of Canadian urban families. During 1959, the index advanced 1.1 p.c. as compared with 1958, this increase being the most moderate since the most recent period of upward movement which began in mid-1956. From a level of 126.1 in January, the index edged downward over the first four months to a low of 125.4 in April. From that point it climbed slowly but steadily to a high of 128.3 in November and back to 127.9 by the end of the year.

Changes in the five component groups varied. The food index, which had climbed from 113 in 1956 to 122 in 1958, actually declined in 1959 to stand 1.1 p.c. below 1958 levels. The other four group indexes all contributed to the over-all increase in varying degrees. Clothing increased a fractional 0.2 p.c. to remain almost at 1958 levels while household operation rose 1.4 p.c. or about the same degree as the total index. Other commodities and services continued to experience the most buoyant movement as this group had the largest increase in 1959 over 1958, 3.1 p.c. The shelter index continued its prolonged rise in 1959 to stand 2.2 p.c. higher than in 1958.



Trade depends on the movement of goods. Large marshalling yards are now equipped with CTC — Centralized Traffic Control. From a tower an operator can control all rail traffic for 600 miles.

Consumer Price Index Numbers, 1952-59

(Av. 1949 = 100)

Year or Month	Food	Shelter	Clothing	Household Operation	Other Commodities and Services	Total
1952.....	116.8	120.2	111.8	116.2	116.0	116.5
1953.....	112.6	123.6	110.1	117.0	115.8	115.5
1954.....	112.2	126.5	109.4	117.4	117.4	116.2
1955.....	112.1	129.4	108.0	116.4	118.1	116.4
1956.....	113.4	132.5	108.6	117.1	120.9	118.1
1957.....	118.6	134.9	108.5	119.6	126.1	121.9
1958.....	122.1	138.4	109.7	121.0	130.9	125.1
1959.....	121.1	141.4	109.9	122.7	134.9	126.5
1959—January.....	122.3	140.2	109.2	121.8	133.4	126.1
February.....	121.2	140.2	108.8	122.0	133.4	125.7
March.....	120.0	140.3	109.4	122.3	133.4	125.5
April.....	119.3	140.5	109.6	122.6	133.7	125.4
May.....	118.5	141.0	109.7	122.5	134.9	125.6
June.....	119.1	141.5	109.2	122.5	135.4	125.9
July.....	119.2	141.7	109.7	122.7	134.9	125.9
August.....	120.5	141.9	109.7	122.6	135.3	126.4
September.....	122.4	142.0	109.8	123.1	135.2	127.1
October.....	124.2	142.4	110.5	123.4	135.5	128.0
November.....	123.8	142.6	111.4	123.5	136.9	128.3
December.....	122.4	142.7	111.4	123.7	136.9	127.9

The Canadian housewife is the big buyer of consumer goods. In 1959, \$145,236,530 worth of electrical home appliances were shipped from factories in Canada.



Co-operative Unions. The total volume of business done by marketing, purchasing, fishermen's and service co-operatives for the year ended July 31, 1958 was \$1,244,558,000, an increase of \$92,000,000 over the previous year. This represents a new high for total co-operative business.

Marketing and purchasing co-operatives, with a membership of 1,332,546, continue to play an important role in the marketing of agricultural products and in the purchasing of supplies for farm people in Canada. Their total business amounted to \$1,208,455,000, an increase of 8 p.c. over the previous year. Co-operatives accounted for 33 p.c. of the total value of farm products marketed in Canada in 1957-58, an increase of 3 p.c. Sales of farm products totalled \$859,000,000, an increase of \$42,000,000.

Co-operative sales of merchandise and supplies to members amounted to \$296,000,000 in 1958, an increase of \$12,000,000; feed and fertilizer represented 34 p.c. of the total.



In a Saskatchewan co-operative, turkeys are placed in vacuum-sealed polyethylene bags before liquid freezing. Nearly one-third of all Canadian members of co-operatives are in Saskatchewan, although Quebec has the largest number of associations.

The local co-operatives are served by ten wholesale associations which are owned and controlled by their respective member co-operatives. These wholesale associations had assets amounting to \$66,000,000 in 1958 and their total sales of supplies and farm products amounted to \$250,000,000, a gain of \$31,000,000.

There are fishermen's co-operatives in most of the areas having a substantial fishing industry. In 1958 fishermen's co-operatives reported sales of fish amounting to \$19,537,000, which constituted about 9 p.c. of all fish marketed in Canada. They sold \$2,652,000 worth of supplies to their members.

Highlights of the year included the opening of a million-dollar co-operative supermarket in Winnipeg, the establishment of a farmer-owner abattoir in Halifax, the reorganization of the United Co-operatives of Ontario to set up a province-wide organization for dairy and poultry products, the formation of



Tobacco is stored in warehouses of the Ontario Flue-Cured Tobacco Growers' Marketing Board before being sold by auction to tobacco-processing companies.

a co-operative building society in British Columbia and the establishment of fishermen's and handicraft co-operatives among the Canadian Eskimos. In Saskatchewan, the provincial government has made provision for the transfer to co-operatives of two of its crown companies—the Saskatchewan Fish Marketing Service and the Government Trading Stores.

Co-operative Associations Reporting by Provinces for the Crop Year ended July 31, 1958

Province	Associations	Shareholders or Members	Volume of Business			Grand Volume of Business Including Other Revenue
			Marketing and Purchasing	Service	Fisher-men's	
	No.	No.	\$'000	\$'000	\$'000	\$'000
British Columbia....	146	95,187	90,995	2,003	6,508	99,506
Alberta.....	595	254,936	178,541	882 ³	—	179,423
Saskatchewan.....	596	530,678	332,822	560	378	333,760
Manitoba.....	126	140,416	97,860	219	—	98,078
Ontario.....	371	251,438	221,869	5,505	3,487	230,861
Quebec.....	737	138,834	162,691	4,312	3,938	170,942
New Brunswick.....	87	20,967	16,256	162	1,554	17,972
Nova Scotia.....	116	33,205	22,008	98	2,206	24,312
Prince Edward Island.....	25	5,524	4,970	2	1,452	6,425
Newfoundland.....	75	7,691	4,853	18	50	4,920
Interprovincial.....	8	113,818 ¹	75,590	20	2,749	78,359
Total 1958.....	2,882	1,592,694	1,208,455	13,781	22,322	1,244,558
Total 1957.....	2,876	1,628,362	1,116,002 ²	15,751	20,626	1,152,379 ²

¹ Associations and individuals.

² Revised.

³ Includes current and other assets of the rural electrification associations.



Sea-going vessels loading and unloading cargo at the Port of Hamilton, where a \$40,000,000 development program is extending port facilities.

Foreign Trade

The level of Canada's foreign trade is directly influenced by a combination of the internal and external economic climate, the volume of exports being largely dependent on the state of demand abroad and to some extent on productive capacity at home, while imports are particularly sensitive to trends in domestic business activity. The sharp expansion of Canada's trade in 1955 and 1956 reflected strong foreign demand for most of our mineral and forest exports as well as unprecedented progress in the exploration and development of Canada's natural resources; at the same time the accelerated pace of capital investment and consumer expenditure was responsible for the marked upturn in imports. But in 1957 and 1958, foreign markets lost some of their previous strength and domestic economic activity slackened. Canada's trade levelled off in 1957, a slight increase in the export total being somewhat more than offset by a small decline in imports. In 1958 exports were maintained in the face of generally unfavourable world conditions, partly owing to somewhat fortuitous circumstances, but imports were further reduced by about 8 p.c.

In 1959 world trade and production recovered from the 1957-58 recession, the recovery being most in evidence in the industrialized countries including Western Europe, Japan, the United States and Canada. Canada's exports rose in 1959 by 5 p.c. and reached a record value of \$5,100,000,000 while imports went up by 9 p.c. to \$5,500,000,000. The import balance, which fell in 1957 and 1958, increased to \$369,000,000 but was still markedly below the record level of 1956.

The importance of foreign trade to the Canadian economy is reflected in the relatively high ratio of exports and imports to the gross national product as well as in the leading position this country holds among the major trading nations of the world. On a per capita basis, Canada normally ranks ahead of almost every other country; in 1957 Canada was second only to New Zealand and in 1958 to Belgium and Luxembourg. In absolute terms, in recent years Canada has ranked fourth in the value of total trade, following the United States, the United Kingdom and the Federal Republic of Germany.

Canadian Trade Trends. Metals and minerals and forest products contributed most to the overall export increase in 1959. Exports of iron and products, stimulated by the prolonged steel strike in the United States, registered the largest relative gain of all the main commodity groups. There were particularly sharp increases in rolling mill products, pipes and tubes and tractors, a marked upturn for iron ore and pigs and ingots and fairly substantial gains in farm implements and engines. Uranium, at \$312,000,000, was, as in 1958, the leading mineral export, almost 90 p.c. of the total going to the United States and virtually all of the remainder to the United Kingdom. Exports of copper rose considerably, the increase to the United States more than offsetting the decline to all other countries. There were marked gains for electrical apparatus, asbestos and abrasives, but only moderate increases in aluminum and nickel. Exports of petroleum, which fell by half in 1958 in a situation of oversupply among the leading producing areas such as the United States, Venezuela and the Middle East, were slightly above this reduced level.

Forest products, the largest major commodity group, accounting for 30 p.c. of total exports, rose sufficiently to more than offset the 1958 decline and to exceed slightly the 1956 value record. Newsprint, at \$722,000,000 the

Air freight is growing steadily; here some 6½ tons of Canadian goods destined for Europe are being loaded. Of the 452 commercial air carrier operating services in Canada, 175 are of foreign registry.



The signing of agreements for the supply of uranium by Canada to the International Atomic Energy Agency and by the Agency to Japan, took place in Vienna on March 24, 1959.



largest export commodity, went up somewhat. Moderate increases were also registered in lumber and timber, wood pulp and shingles, and a sharp gain occurred in plywoods and veneers. Among some of the other leading export commodities, increases were recorded in whisky, tobacco, processed milk, fertilizers and synthetic plastics.

Wheat, which at \$442,000,000 was again the second largest export, showed a small value decline. Exports to the United Kingdom, accounting for one-third of the total, were slightly lower. In some of the other main wheat markets, a marked drop occurred in shipments to India, the Netherlands and Switzerland, but exports to West Germany and Japan were higher. Exports of beef cattle returned to the level of 1957, following a very sharp upturn in United States purchases in 1958. Exports of aircraft, which were boosted in 1958 by special shipments of military planes to West Germany and Belgium, fell by more than 75 p.c. There were also reduced exports of barley, wheat flour, flaxseed and fresh, frozen and canned fish.

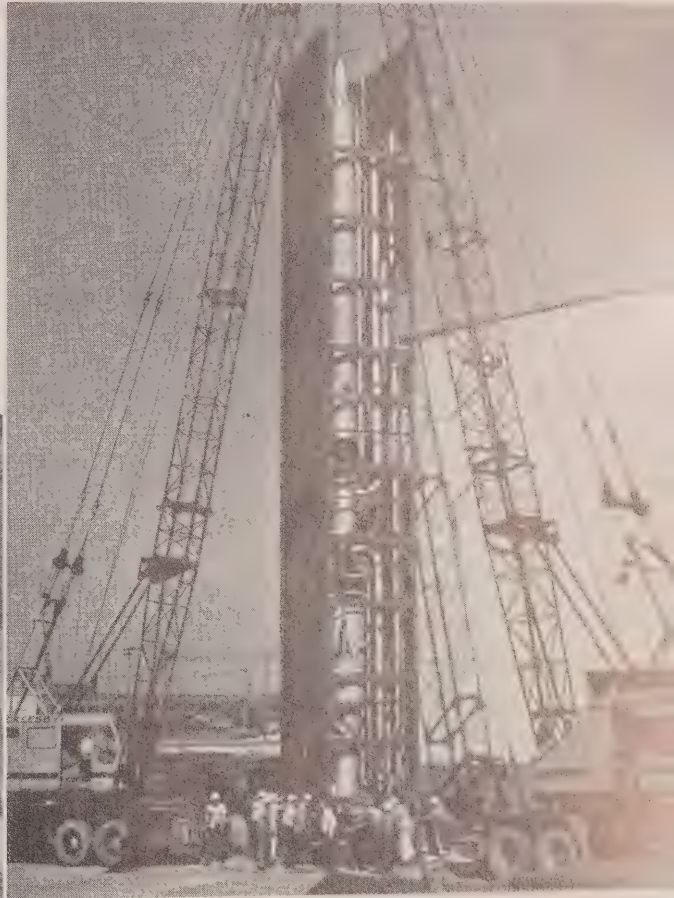
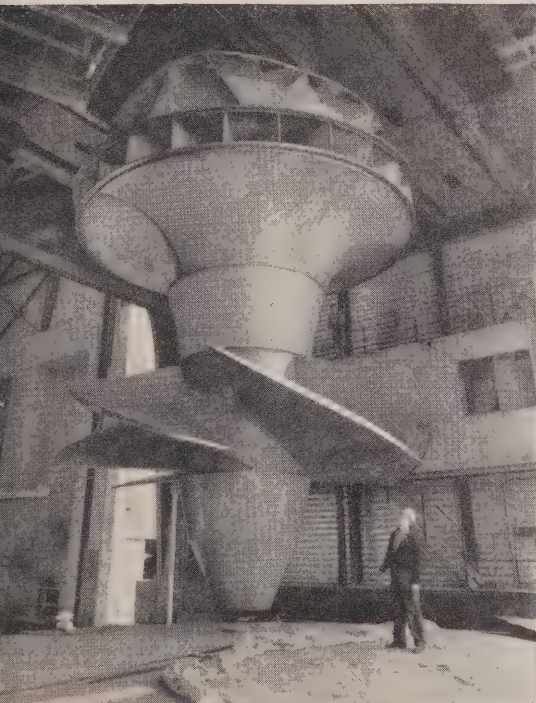
The import increase in 1959 was widespread, affecting all the major commodity groups and most leading commodities. Iron and steel products accounted for about half of the total import gain and for almost two-fifths of all imports into Canada. Non-farm machinery, as usual the largest import category, rose 10 p.c. to \$585,000,000. Imports of passenger automobiles, which increased substantially in 1958 counter to the prevailing trend for iron and steel products, went up at an even higher rate in 1959, most of the increase being accounted for by British and European cars. There were also considerable gains for automobile parts, farm implements, tractors and freight automobiles, but some decline took place in rolling mill products and a sharp drop in pipes and tubes.

Rubber registered the largest relative gain among the leading import commodities in 1959. Petroleum, the second ranking import, showed virtually no change in value, but fuel oils more than made up for the decline in 1958. There were higher imports for the fibres and textiles group as a whole, with moderate gains in cotton and synthetic fabrics, almost no change in wool fabrics and some decline for raw cotton. Increases were also registered for wood and paper products, many chemicals, electrical apparatus, bauxite and alumina, refrigerators, medical, optical and dental goods and scientific equipment. Imports of aircraft dropped considerably, and there were also some declines for coal, sugar and coffee.

Trading Partners. The United States is the leading country in Canada's trade by a wide margin. Exports to that country consist mainly of industrial materials, especially forest products and minerals, while imports comprise mostly industrial machinery and equipment, and a broad range of consumer goods. A similar pattern of trade, but with wheat playing a most important part in Canadian exports, also prevails with the United Kingdom, our second ranking trading partner, and with most of West European countries and Japan. Manufactured goods are of relatively greater importance in Canadian exports to many Commonwealth and Latin American countries, while imports from these two areas consist largely of primary commodities which are not produced in Canada.

In 1959, the United States provided a market for 61.9 p.c. of Canadian exports and was the source of 67.3 p.c. of Canada's imports. The proportion of Canada's exports going to the United Kingdom stood at 15.5 p.c., while that country's share of our imports was 10.7 p.c. The respective shares of Canada's trade with the other main areas were 5.5 p.c. and 4.4 p.c. for the Commonwealth, 9.5 p.c. and 6.8 p.c. for Europe, and 3.4 p.c. and 6.2 p.c. for Latin America.

A Canadian designed and built low-temperature gas separation plant leaving a Montreal factory for California. About 40 p.c. of such equipment integrated into the chemical and petroleum industries at different centres across the United States has been produced in Canada.



Eight 90,300 hp. turbines for the American Big Bend power project are being built in Canada. They will be the largest fixed blade propeller turbines in the world.



An ore carrier at the Lakehead dock awaits its share of the estimated 2,325,000 tons of iron ore to be shipped from the Steep Rock range in 1960.

International Background. The post-war upward trend of Canada's foreign trade has been conditioned by the considerable expansion of the Canadian economy as well as the general growth in world economic activity and international trade in this period. As well, the post-war years have been characterized by a high degree of international agreement and co-operation directed toward the solving of economic and trade problems on a world-wide basis, with particular attention to assistance to the less developed countries and to gradual removal of restrictions on trade and payments. A number of international institutions have been established to deal with these problems, including the various agencies of the United Nations, the Organization for European Economic Cooperation (OEEC), the Colombo Plan, the International Monetary Fund, the World Bank for Reconstruction and Development and the General Agreement on Tariffs and Trade (GATT). Canada has always had a vital stake in the maintenance of a healthy world economy and unrestricted multilateral trade and has therefore been active in all these organizations.

The initial post-war difficulties, stemming from wartime destruction and general disruption of production and trade, have been overcome in a relatively short time, as the immediate assistance extended to the war-damaged nations, especially by the United States but also by Canada, helped the basic growth factors inherent in the world economy to assert themselves. At the same time, however, certain structural problems become apparent, associated with the unevenness of economic growth among various countries and with the gap between productive capacity and the pent-up demand for both investment and consumer goods; this was reflected in strong inflationary tendencies and the world-wide dollar shortage which culminated in the widespread currency devaluations of 1949.

Following the boom and collapse in raw materials resulting from the Korean war, the world economy has embarked since 1953 on a new phase of expansion, only briefly interrupted by the relatively mild recessions of 1954-55 and 1957-58. During 1953-57 world trade rose by nearly one-third in volume, contracted somewhat in 1958, and expanded again in 1959 to exceed the level



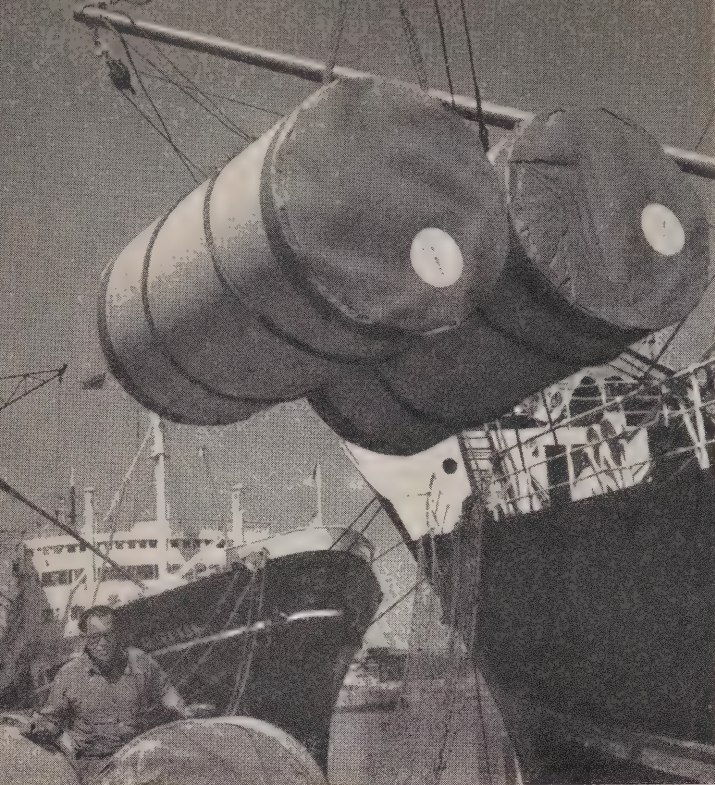
Canadair's giant CL-44 turbo-prop freighter is becoming a major export item. Equipped with a swing-tail that allows loading of bulk items, the CL-44 claims an operating cost of 3.5 cents per ton-mile.

of 1957 by some 6 p.c. At the end of 1959 there was some evidence that most of the industrialized countries and a few of the non-industrial ones had begun to combine economic growth with relative price stability, and there were signs that the post-war inflation had perhaps come to an end.

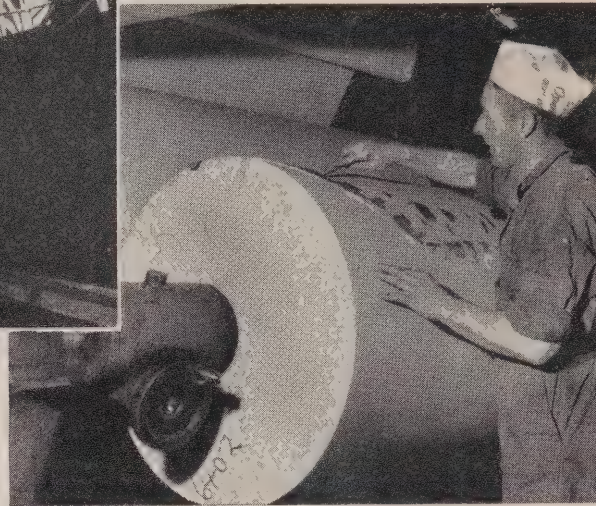
The post-war expansion of world production has been mainly accounted for by the industrialized countries. While many non-industrial countries registered considerable progress, their economic growth has generally not kept pace with that of the industrial countries. As well, the post-war expansion of trade has been reflected more in trade among the industrial countries than in their imports from the primary producing countries. While substantial capital as well as technical assistance has been extended to most primary producing countries with the aim of strengthening and diversifying their economies, the non-industrial countries' prospects for economic development are still generally dependent on one or a few export commodities subject to violent price fluctuations arising from the cyclical swings of international demand. Another factor adding to these difficulties has been the restrictive measures which most of the industrial countries have used to accord protection to their own primary, and sometimes manufacturing, industries.

De Havilland has delivered five Caribou troop-carriers to the U.S. Army. Featuring short takeoff and landing performance, the Caribou will carry 32 combat-equipped troops.





Loading newsprint for export at Three Rivers, Que.; later mounting it on the roll stands of the presses of the Melbourne (Australia) Herald.



The world shortage of the main basic foodstuffs had been overcome in the early fifties, but supplies of industrial raw materials continued to fall short of the increasing requirements until about the middle fifties. Since 1956 the growth in production has out-paced the increase in consumption which was additionally reduced by the gradual abandonment of strategic stockpiling. Consequently commodity prices resumed their long although irregular downward trend from the post-Korean peak, with a sharp decline in 1957 and a levelling off in 1958, but with some evidence of recovery in 1959.

As a consequence of the overall expansion of the world economy in recent years, there has taken place a general strengthening of the international balance of payments and a gradual disappearance of the dollar shortage. In every year since 1950, with the exception of 1957, the United States has had an overall payments deficit, the net outflow of private capital and government grants and loans exceeding the export surplus. This pattern became accentuated in the last two years due to declining exports and increasing imports, and in 1959 the United States export surplus fell to \$1,000,000,000 and the balance of payments deficit rose to \$3,700,000,000. In the last ten years the gold reserves of the United States went down from almost \$25,000,000,000 to about \$19,000,000,000, while the rest of the world has increased its holdings of gold and U.S. dollars by approximately \$22,000,000,000. However, most of this gain accrued to Western Europe, the United Kingdom and the sterling area as a whole. Another development tending to strengthen international liquidity was the recent decision to enlarge greatly the resources of the International Monetary Fund and the World Bank.

As a corollary of the general improvement in the international balance of payments, considerable progress has been made in the last few years in the direction of freer multilateral trade and payments. Many quantitative controls have been eased and tariff concessions have continued to be made among the contracting parties to GATT. At the end of 1958, 14 European countries, including the Benelux countries, Denmark, France, Germany, Italy, Norway, Sweden and the United Kingdom, had established external convertibility of their currencies and a few countries in other parts of the world had taken similar steps.

In view of the vital importance of free and multilateral trade to Canada's economy, the latest European developments in the field of commercial policy have been of great interest to this country. On January 1, 1958, the European Economic Community (OEEC)—comprising the Benelux countries, France, Italy and Western Germany—came into being. The OEEC is intended to become a customs union in which tariffs among the participating countries will be gradually abolished and a common external policy adopted toward the outside world, as a first step toward the ultimate integration of the respective economies into one single unit. The first reductions of tariffs and increases in quotas among the member countries of the OEEC were implemented on January 1, 1959, and the tariff concessions were extended on a one-year basis to all GATT countries.

Following the breakdown of negotiations for a European free trade area, which was to comprise all members of the OEEC, on November 20, 1959, a convention for the establishment of the European Free Trade Area (EFTA) was initialled by the governments of Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom. The objective of EFTA is to create a new European trading group which would eventually result in a free trade area for the participating countries, each of whom would, however, retain its own external tariff structure. But unlike the OEEC, the EFTA is not aiming at becoming a fully integrated single economic unit. In the case of both these regional groupings, the elimination of internal tariffs is restricted to industrial goods only, with special arrangements for agricultural products.

From the Canadian point of view, besides the implications of the special arrangements for trade in agricultural products, the tariffs on a number of

The Canadian Trade Commissioner in India inspects a shipment of Quebec asbestos to see that it is in good condition.



important Canadian exports, such as lumber, pulp, synthetic rubber and aluminum, is to be fixed through negotiation. With regard to the EFTA, there is the question of how Canadian exports will be affected by the gradual whittling down and the eventual disappearance of the traditional preferential tariffs in the United Kingdom market.

Exports, Imports and Total Trade of Canada, 1953-59¹

(Millions of Dollars)

Year	Exports			Imports	Total Trade	Balance of Trade
	Domestic Produce	Foreign Produce	Total			
1953.....	4,097.1	55.2	4,152.3	4,247.8	8,400.1	- 95.5
1954.....	3,860.2	65.6	3,925.8	3,967.4	7,893.2	- 41.6
1955.....	4,258.3	69.4	4,327.8	4,567.8	8,895.5	-240.0
1956.....	4,760.4	73.3	4,833.8	5,547.0	10,380.7	-713.2
1957.....	4,788.9	95.3	4,884.1	5,473.3	10,357.5	-589.2
1958.....	4,791.4	102.9	4,894.3	5,050.5	9,944.8	-156.1
1959.....	5,021.5	118.6	5,140.1	5,508.7	10,648.8	-368.6

¹ Revised to exclude settlers effects, tourist purchases, private donations and other non-commercial transactions.

Leading Countries in World Trade, 1957 and 1958¹

Country	Exports, f.o.b.		Imports, c.i.f.		Total Trade	
	1957	1958	1957	1958	1957	1958
VALUE OF TRADE (Millions of U.S. Dollars)						
United States.....	20,862 ²	17,862 ²	14,297	13,986	35,159	31,848
United Kingdom.....	9,684	9,395	11,412	10,583	21,096	19,978
Germany, Federal Republic of.....	8,575	8,807	7,499	7,361	16,074	16,168
Canada.....	5,456	5,440	6,346	5,790	11,802	11,230
France.....	5,111	5,122	6,174	5,604	11,285	10,726
Netherlands.....	3,098	3,218	4,105	3,625	7,203	6,843
Belgium and Luxembourg.....	3,186	3,046	3,432	3,129	6,618	6,175
Japan.....	2,858	2,877	4,284	3,033	7,142	5,910
Italy.....	2,550	2,536	3,674	3,169	6,224	5,705
Sweden.....	2,137	2,088	2,428	2,366	4,565	4,454
World Trade³.....	101,031	96,068	108,239	100,727	209,270	196,795
TRADE PER CAPITA (U.S. Dollars)						
Belgium and Luxembourg.....	342	325	369	334	711	659
Canada.....	329	319	383	340	711	659
New Zealand.....	347	306	371	349	718	655
Switzerland.....	305	297	384	329	689	626
Venezuela.....	385	367	305	253	690	620
Netherlands.....	281	288	372	324	654	612
Sweden.....	290	282	329	319	619	601
Trinidad and Tobago.....	299	292	272	304	571	596
Norway.....	235	211	365	371	600	582
Denmark.....	261	279	302	297	563	577

¹ Countries ranked by total trade and total trade per capita in 1958.

² Includes military aid extended to other countries.

³ Exclusive of China, U.S.S.R., and eastern European countries not currently reporting trade but including countries not listed above.

Principal Domestic Exports, 1955-59¹

Commodity	1955	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000	\$'000
Newsprint paper.....	665,877	708,385	715,490	690,209	722,271
Wheat.....	338,216	513,081	380,415	446,078	441,830
Lumber and timber.....	386,298	328,099	282,690	293,600	323,717
Uranium ores and concentrates..	26,533	45,777	127,934	276,506	311,904
Wood pulp.....	297,304	304,536	292,406	285,449	311,253
Aluminum, primary and semi-fabricated.....	210,971	234,806	229,386	222,442	230,683
Nickel, primary and semi-fabricated.....	215,169	222,909	248,253	212,580	226,857
Copper, primary and semi-fabricated.....	163,924	194,206	147,247	135,021	158,827
Iron ore.....	99,814	144,443	152,281	107,674	157,814
Asbestos, unmanufactured.....	94,804	99,895	107,058	90,745	110,431
Farm implements and machinery (except tractors) and parts....	72,206	63,937	67,339	93,829	110,205
Whisky.....	60,862	68,660	66,994	70,276	78,262
Petroleum, crude and partly refined.....	36,253	103,923	140,975	73,044	74,541
Fish, fresh and frozen.....	55,263	59,594	63,186	70,898	66,523
Barley.....	76,461	94,977	67,522	78,118	66,310
Wheat flour.....	74,442	71,549	61,175	69,398	64,903
Zinc, primary and semi-fabricated.....	70,558	74,011	64,921	55,385	55,097
Rolling mill products (steel).....	20,313	25,719	33,043	31,833	53,509
Fertilizers, chemical.....	56,296	49,211	48,958	46,476	48,792
Machinery (non-farm) and parts.	35,789	47,130	57,177	46,881	48,403

¹ Commodities ranked by value of exports in 1959.Principal Imports, 1955-59¹

Commodity	1955	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000	\$'000
Machinery (non-farm) and parts.	445,875	628,521	631,599	532,916	585,235
Automobile parts (except engines)	246,505	284,788	260,075	240,526	288,596
Petroleum, crude and partly refined.....	229,779	271,291	305,557	278,540	277,495
Electrical apparatus, n.o.p.....	226,715	257,292	249,328	240,112	269,402
Automobiles, passenger.....	83,726	125,539	106,596	141,543	199,601
Tractors and parts.....	115,375	159,627	127,658	117,290	172,069
Engines and boilers.....	109,622	132,325	138,451	134,603	135,002
Rolling mill products (steel).....	129,679	234,709	221,257	147,049	131,263
Farm implements and machinery (except tractors) and parts....	62,874	72,522	74,572	81,007	101,752
Fuel oils.....	77,754	81,799	76,204	64,886	77,903
Aircraft and parts (except engines).....	138,091	91,304	93,691	94,836	76,745
Cotton fabrics.....	53,400	62,130	65,049	66,168	70,058
Paperboard, paper and products..	52,690	61,954	62,027	65,478	68,051
Coal, bituminous.....	74,453	96,516	90,692	67,067	65,115
Apparel (except hats) of all textiles.....	39,039	44,793	47,034	48,903	61,830
Synthetic plastics, primary forms.	41,072	47,092	49,747	54,891	61,024
Sugar, unrefined.....	52,312	55,828	75,632	58,578	56,605
Pipes, tubes and fittings.....	50,290	123,088	147,727	88,371	55,305
Parcels of small value.....	41,639	49,371	51,982	53,583	54,514
Rubber, crude and partly refined.	44,110	40,610	39,101	30,779	52,063

¹ Commodities ranked by value of imports in 1959.

Domestic Exports to Leading Countries, 1955-59^{1,2}

Country	1955	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000	\$'000
United States.....	2,547,636	2,803,085	2,846,646	2,808,067	3,083,151
United Kingdom.....	767,642	811,113	720,898	771,576	785,802
Japan.....	90,817	127,803	139,082	104,853	139,724
Germany, Federal Republic of...	90,526	133,847	151,508	201,134	129,155
Norway.....	46,931	57,609	55,491	55,849	62,308
Belgium and Luxembourg.....	53,314	57,789	60,194	69,531	56,127
Australia.....	58,291	47,582	48,662	52,562	53,929
Netherlands.....	47,500	54,371	69,553	74,721	53,849
India.....	24,573	25,614	28,902	78,994	53,654
Union of South Africa.....	55,920	64,565	48,322	49,960	51,243
Venezuela.....	30,672	34,203	39,661	43,480	45,833
France.....	42,134	52,710	57,030	44,688	43,157
Italy.....	27,423	37,559	62,685	29,718	31,717
Mexico.....	37,087	39,303	42,477	31,429	27,633
Switzerland.....	25,493	33,294	24,894	29,243	25,728
Jamaica.....	12,767	17,063	19,247	15,588	18,538
Colombia.....	22,641	17,552	14,587	13,813	17,668
Pakistan.....	6,109	10,376	11,308	15,311	17,317
Poland.....	3,989	17,903	16,632	560	15,631
Cuba.....	13,883	15,284	16,846	17,549	15,222

¹ Countries ranked by value of exports in 1959.

² Revised to exclude settlers' effects, tourist purchases, private donations and other non-commercial transactions.

Imports from Leading Countries, 1955-59^{1,2}

Country	1955	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000	\$'000
United States.....	3,331,143	4,031,394	3,887,391	3,460,147	3,709,065
United Kingdom.....	393,117	476,371	507,319	518,505	588,573
Venezuela.....	187,226	208,346	248,069	209,538	204,582
Germany, Federal Republic of...	52,215	84,430	92,527	102,644	123,905
Japan.....	36,586	60,729	61,396	70,092	102,669
Arabia.....	6,984	34,314	34,315	68,021	70,725
France.....	24,364	31,717	34,987	40,007	56,940
Netherlands Antilles.....	30,699	38,103	39,259	39,453	47,120
Belgium and Luxembourg.....	28,854	52,379	43,681	35,759	44,786
Australia.....	26,161	26,207	28,572	32,755	41,080
Italy.....	18,307	24,607	32,646	32,150	37,056
Mexico.....	28,801	41,592	20,987	31,888	34,201
Jamaica.....	15,516	24,572	40,133	27,491	31,012
India.....	35,105	30,852	29,185	27,655	29,221
Netherlands.....	19,073	21,524	21,690	26,905	29,153
Malaya and Singapore.....	28,790	28,544	27,313	19,863	28,644
Brazil.....	30,692	34,807	35,276	27,419	28,479
Switzerland.....	18,965	21,925	24,053	26,491	24,514
Sweden.....	11,996	17,135	15,332	13,939	18,077
British Guiana.....	18,282	20,482	20,988	20,627	17,829

¹ Countries ranked by value of imports in 1959.

² Revised to exclude settlers' effects, tourist purchases, private donations and other non-commercial transactions.



The value of passenger cars imported in 1959 climbed from sixth to fifth place among domestic imports; of automobile parts, from third to second.

Canadian Balance of International Payments. In addition to foreign merchandise trade, Canada has a variety of other current exchanges of services and capital with other countries. All these economic transactions are presented in statements of the Canadian balance of payments. Exchanges of services and merchandise trade are included in the current account, while the capital account shows the direction and extent of movements of capital between Canada and other countries.

Outstanding among the features of Canada's balance of payments during the 1950's are the deficits that have arisen from excess of imports of goods and services over exports of goods and services, and the capital inflows for private investment in industry. The capital inflows have been associated with growth and development and have, in turn, contributed to the current deficits by augmenting demands for imported goods and services. Deficits increased from \$334,000,000 in 1950 to \$1,424,000,000 in 1957, being then larger than in any earlier year and comparable with deficits in some earlier periods of exceptional development in Canada. The period of greatest relative imbalance occurred in the latter part of 1956 and carried over into the first half of 1957. By the end of that year imbalance had fallen off from peak levels but continued in 1958 at levels higher than in any year before 1956.

While the import balance on merchandise account fell in 1958, the deficit from all other transactions continued to rise to new heights, and a deficit of \$1,085,000,000 resulted. The increasing tempo of Canadian economic activity

in 1959 led to a rising deficit on merchandise account, which, coupled with the persistent deficit from other transactions, brought the total again to the level of 1957. Although the deficits arising from merchandise transactions have been subject to wide variations, only once in the post-war period have they exceeded the deficit on account of other current transactions. The balance from non-merchandise transactions has been persistent and growing, and it is now approaching \$1,000,000,000 annually.

There are many factors which have contributed to the growth of this highly significant element in Canada's international transactions. Rising personal incomes in Canada have opened widening opportunities for spending on non-resident services including travel. Remittances have risen with a changing population many of whom have family origins outside of Canada. The largest element in the deficit from non-merchandise transactions has been interest and dividend payments,—the cost of financing the accumulated deficits whereby non-residents have contributed to the rapidity of growth in the Canadian economy. Some of the effects of these massive imports of non-resident capital have yet to be fully felt as new projects mature. The growing international financial relationships have also been reflected in increasing payments by branch and subsidiary companies for administrative and other services supplied from abroad.

The financing of recent large external deficits was accomplished on the whole with little or no visible strain on the Canadian balance of payments. Over most of the period the capital inflows which served this purpose were of a long-term character, mainly taking the form of direct investment in branches and subsidiaries in Canada by United States and other non-resident business firms, particularly in petroleum, mining and other resource industries. Direct and portfolio equity investment was buttressed at times by large increases in foreign-held funded debt in response to divergent interest rate structures in Canada and in the United States. New issues of Canadian securities sold abroad have been particularly heavy since 1956. Movements of short-term capital have also occurred on a comparatively large scale, particularly in recent periods, but the inflows and outflows have, over a period of time, tended to offset each other. The persistent inflows of capital have kept the Canadian dollar at a premium on the world's exchange markets.

Green coffee beans are dumped into a cleaning unit before roasting. More than half the coffee sold in the world markets today comes from Brazil.



International Investment Position. The substantial growth in the investment of foreign capital in Canada during the past decade has been the principal factor in increasing Canada's net international indebtedness from \$3,700,000,000 at the end of 1949 to more than \$13,500,000,000 at the end of 1958. At the latter date, Canada's gross external liabilities amounted to \$21,700,000,000, more than half of which represented direct foreign investment in Canadian enterprises controlled by non-residents. A substantial part of the remainder covered portfolio investment in Canadian corporations by non-residents. At the same time Canada's gross external assets totalled \$8,200,000,000, of which \$3,800,000,000 was represented by government loans to overseas countries, subscriptions to international financial organizations and holdings of gold and foreign exchange. With a further rise in 1959, Canada's net foreign indebtedness has quadrupled in the last decade.

Dependence on external sources for some types of capital, together with the special advantages often associated with this capital, have led Canada to a degree of foreign ownership and control of industry unique in economic history. By the end of 1957 foreign investment accounted for 64 p.c. of the ownership of the Canadian petroleum and natural gas industry and represented control of 76 p.c. The mining industry was also 56 p.c. foreign-owned and 61 p.c. foreign-controlled. Manufacturing other than petroleum refining was 50 p.c. foreign-owned and 56 p.c. foreign-controlled. The degree of foreign



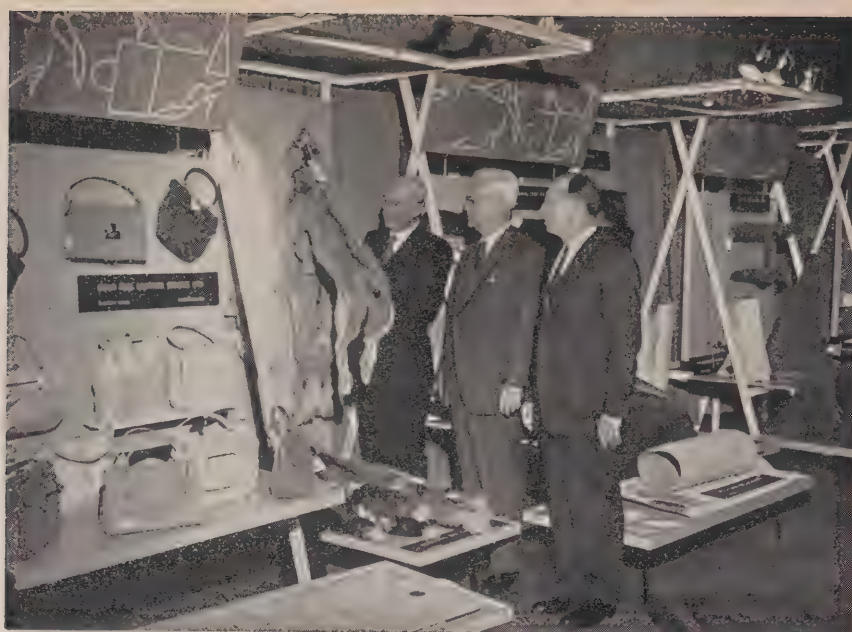
The manufacture of rubber goods is Canada's seventeenth leading industry. All the natural rubber used must be imported.

Mahogany logs are imported for the production of veneers.



Canada imports many goods not indigenous to the country.





One in every five Canadians depends on export trade for his livelihood. Canadian goods are shown abroad at trade fairs and expositions. Canada held its own trade fair in Boston in 1959.



Canadian canned goods in Kingston, England; furs at the International Trade Fair in Milan; sporting goods in Boston.

ownership and control varied considerably in different branches of manufacturing. Other areas of Canadian wealth such as utilities, merchandising, housing and social capital are, of course, Canadian-owned and controlled to a much larger extent than are the petroleum, mining or manufacturing industries.

A very substantial part of foreign capital in Canada now takes the form of equity investment and, as a result of the retention of earnings, foreign investments increase each year by some hundreds of millions of dollars more than the capital actually imported. Indeed, during the post-war years the earnings accruing to non-resident investors but voluntarily retained in Canada to finance expansion have amounted to about \$3,500,000,000. In addition, actual transfers of investment income have, in recent years, approached \$600,000,000 annually. The significant part of the corporate profits in the Canadian economy which accrue to non-residents is a measure of the important place of foreign capital in the development of this country.

The Department of Trade and Commerce. Trade promotion is the prime function of the Department of Trade and Commerce, which makes a wide variety of services available to businessmen. Specialists in Ottawa are supported by a corps of trade commissioners in 62 capitals and commercial centres around the world. They are familiar with economic conditions in their respective territories, and can provide information on potential markets for Canadian products, such as foreign competition, import controls, tariff provisions, shipping facilities and labelling regulations. They can assist in securing reliable agents, and provide introductions to visiting businessmen. Trade commissioners return home periodically, and arrange tours during which they can discuss specific problems with firms seeking their guidance. These tours also enable foreign service officers to familiarize themselves with the economic development of Canada.

Reports on conditions in their respective territories, market opportunities, tariff changes and specific industries of interest to Canadians are prepared by trade commissioners for publication in "Foreign Trade", which also carries a wealth of other commercial intelligence of considerable value to exporters. Offices of the Canadian Trade Commissioner Service in St. John's, Newfoundland, and Vancouver, British Columbia, assist businessmen in the Atlantic provinces and Western Canada in securing foreign orders for their products.

Commodity officers, in Ottawa, familiarize themselves with the many firms in a position to meet the requirements of consumers in other lands, and relay inquiries received through trade commissioners to those best qualified to meet the demand. Commodity officers also encourage firms with no previous experience of external trade, or firms with new products, to explore the possibilities of markets in other lands. About 65 p.c. of Canada's exports in 1958 consisted of items classified as chiefly or mainly manufactured, which indicates the ability of Canadian firms to meet competition in foreign markets, and illustrates the desirability of maintaining a close relationship between industry and the commodity officers concerned.

Commodity officers in the Agriculture and Fisheries Branch perform similar functions. They also maintain close connections with the Departments of Agriculture and Fisheries, together with the trade associations concerned, in an effort to stimulate the sale of farm and fisheries products in other lands. The Grain Division co-operates with the Canadian Wheat Board and

the Board of Grain Commissioners for Canada in marketing wheat and grain, and in maintaining the high standards that are recognized throughout the world. Information on government policy, consumption and market trends in other lands is obtained from trade commissioners and made available to the Departments of Agriculture and Fisheries, so they in turn may assist the Canadian producer in securing a larger share of the foreign market for food-stuffs of Canadian origin.

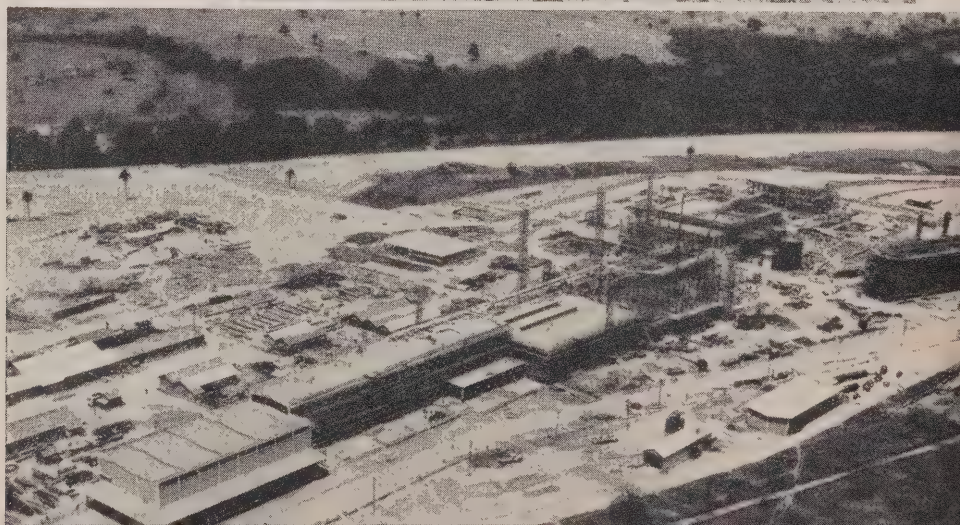
The International Trade Relations Branch is responsible for the review of trade relations with other countries, the preparation of material for trade and tariff negotiations, participation in conferences under the General Agreement on Tariffs and Trade, and the interpretation and clarification of foreign regulations for Canadian exporters. The Economics Branch of the Department analyses the general economic situation in Canada.

The Industrial Development Branch is concerned with the establishment of new industries in Canada, the utilization of excess manufacturing capacity, and the development of new products, including those suitable for export markets. It maintains close liaison with provincial, municipal and other agencies concerned with industrial development. The Small Business Branch studies the problems of small business and recommends remedial measures. The Export Credits Insurance Corporation, which reports to Parliament through the Minister of Trade and Commerce, insures Canadian exporters against losses arising from credit and political risks involved in the export of goods.

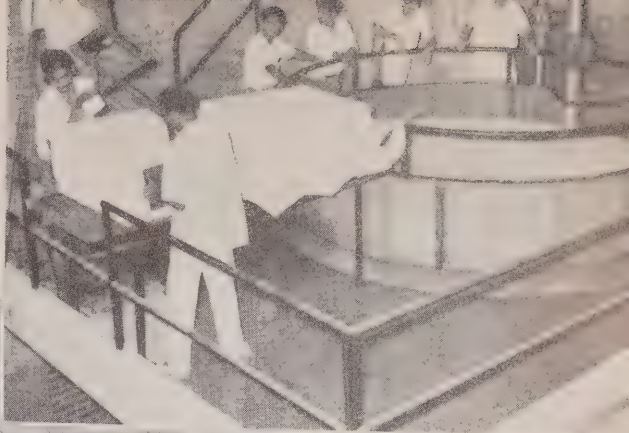
Invisible exports include engineering and other skills. "Operation Grasshopper" is a 60,000-mile aerial survey in Surinam by Canadian technicians, to aid mineral resources development.



This Canadian designed and engineered pulp mill is near Moqi Quaçu, Brazil.



With engineering consultants and design, steel and equipment provided by Canada, a 27,000 hp. power plant has been built at Goalpara, East Pakistan, to supply the nearby industrial town of Khulna.



The hydropulper in operation in one of Khulna's four jute mills.

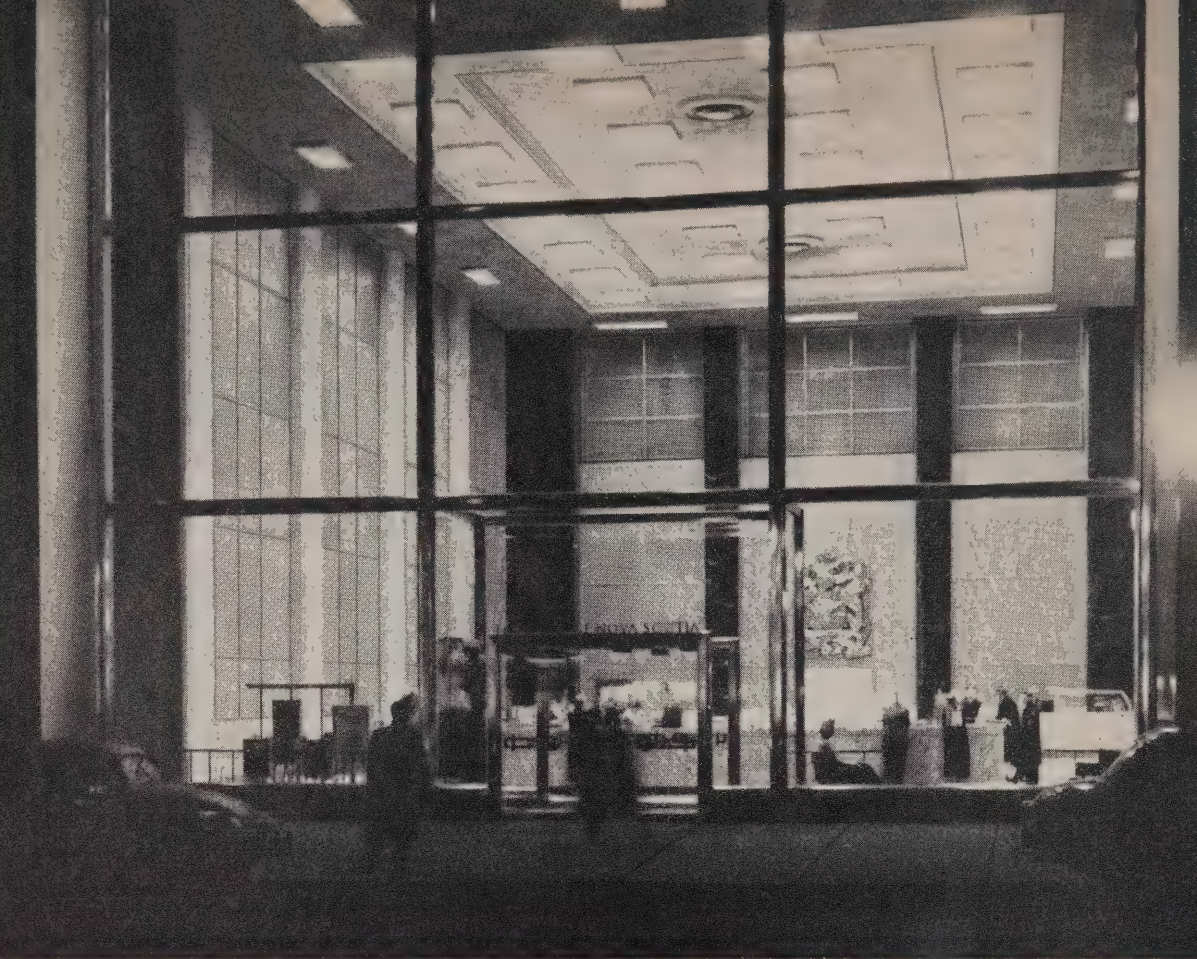


A view of the power plant at Goalpara on the Bhairab River, a tributary of the Ganges.

Trade promotion is likewise a principal objective of the Canadian Government Exhibition Commission, which is responsible for the design, construction, erection and administration of Canadian Government exhibits at international expositions and trade fairs. The Trade Publicity Branch is also actively engaged in this phase of trade promotion, which involves advertising and the provision of literature for distribution to visitors to Canadian displays. It supplies material for reproduction in foreign lands, including photographs, provides prospective exporters with a better appreciation of the services obtainable from the Department, and the general public with a better understanding of the significance of trade to the national welfare.

An official of the Indian Department of Atomic Energy checks a Cobalt 60 unit on its arrival in Bombay from Canada.





Banking

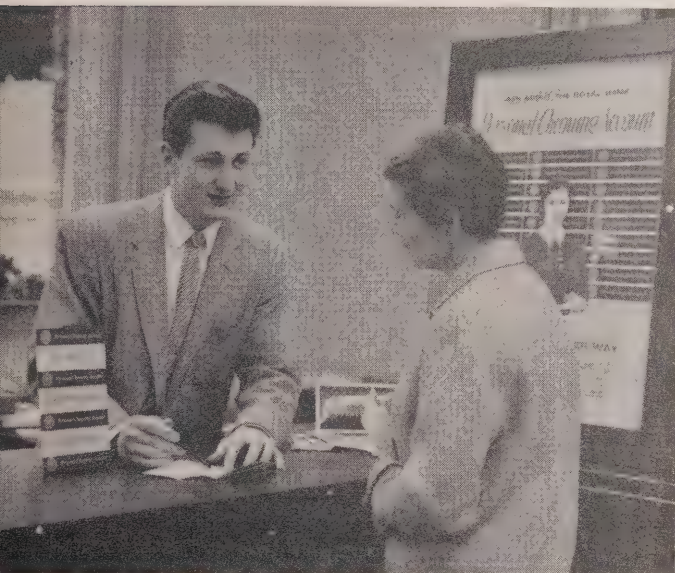
Canadian money is based on the decimal system, with 100 cents equal to one dollar. Most dollars and their multiples are in the form of paper money, although there are gold coins in denominations of \$20, \$10 and \$5 and there are also silver one-dollar coins. Other coins issued by the Royal Canadian Mint are silver coins in denominations of 50 cents, 25 cents and 10 cents; pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. A tender of payment of money in coins is a legal tender in the case of gold coins for the payment of any amount; in the case of silver coins, for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

Commercial banking is conducted by nine privately owned banks which are chartered by Act of Parliament. Of these nine, six are large nation-wide institutions with branches in most provinces; two operate mainly in the province of Quebec and surrounding areas, and one is a subsidiary of a Netherlands bank with three branches.

The authority under which the chartered banks operate is the federal Bank Act, first passed in 1871 and subject to revision every ten years to keep it abreast of changing trends. The Act sets out the requirements for incorporation and for internal regulation of the chartered banks, states what cash reserves they must keep, and sets forth a variety of rules governing the conduct of business with the public. The banks are authorized to accept deposits,

make loans covering a wide range of commercial, industrial and agricultural activities, buy and sell securities, deal in foreign exchange and are prohibited from engaging in any trade or business other than banking. Provision is made for government inspection at least once a year. Within the limitations imposed by the Bank Act, the banks are free to guide their own affairs.

The lending field occupied by the chartered banks is the vital one of providing short-term working capital. Credit is extended to producers, industry, institutions, municipalities, corporations, governments and to tens of thousands of individuals for a multitude of purposes. Canada is the only country in the world which permits banks to make advances against the security of raw materials and to continue the security on the same document through to the finished product and the marketing thereof. The latest analysis of bank loans on Sept. 30, 1959, shows total loans in Canada (excluding residential mortgage loans under the National Housing Act) of \$6,323,935,000. Of this amount, \$4,545,282,000 was for agricultural, industrial and commercial purposes, and \$1,153,735,000 to individuals.



Although stately modern banks are still being erected in the downtown areas of big cities, the trend is to build branches where people are—in suburban shopping centres and in multi-storied office buildings, to serve companies and their employees.

The head office of a Canadian bank does not transact ordinary day-to-day business with the public; it buys and sells securities as part of the bank's investment portfolio, it advises branch managers on applications of credit when large amounts are involved, and maintains general administrative departments. The branches operate deposit accounts, make loans, pay out cash, deal in foreign exchange, and perform a variety of other services to the public, such as making collections, keeping safety deposit boxes, and so on. In these matters the branch manager has a considerable degree of independent authority, depending on his experience and the importance of his branch.

There has never been any geographical restriction on the operation of the chartered banks. Thus Canada has always had a relatively small number

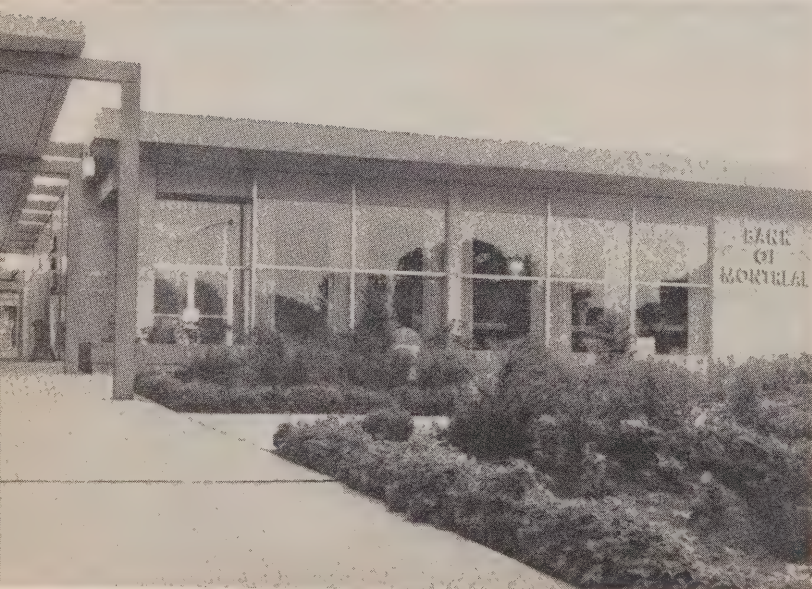
of large banks with significant capital and an extensive network of branches. At the end of 1959 there were 5,052 branch offices of Canadian banks (including sub-agencies), an increase of 1,642 in the past 11 years. Foreign offices are maintained by most of the chartered banks in the principal money marts of the world and other offices are established in many foreign cities, mainly in the United States, the United Kingdom, the West Indies and South America. The banks, therefore, are in a particularly favourable position to assist in the trade of the country by providing information and assistance concerning markets, trade regulations, tax situations, foreign exchange, financial arrangements, and so on. There is no doubt that the services of the Canadian banks have contributed materially to the development of this country as a major producing and trading nation.

Statistics of the Chartered Banks of Canada, Dec. 31, 1959

Bank	Branches in Canada and Abroad ¹	Total Assets	Personal Savings Deposits	Total Deposit Liabilities	Loans and Discounts ²	Liabilities to Share- holders
	No.	\$'000	\$'000	\$'000	\$'000	\$'000
Bank of Montreal.....	813	3,270,812	1,535,817	3,021,806	1,541,183	201,462
Bank of Nova Scotia...	584	1,817,362	709,874	1,695,183	1,079,538	89,422
Toronto-Dominion Bank.....	544	1,691,013	805,699	1,582,556	832,221	83,200
Provincial Bank of Canada.....	358	339,521	178,458	320,143	172,353	17,433
Canadian Bank of Commerce.....	858	2,913,907	1,311,200	2,692,237	1,389,811	176,921
Royal Bank of Canada. Banque Canadienne Nationale.....	969	4,044,016	1,487,213	3,704,232	1,816,080	256,021
Imperial Bank of Canada.....	595	729,153	411,715	683,839	365,644	42,541
Mercantile Bank of Canada.....	328	978,019	458,052	904,461	514,809	55,247
	3	51,121	1,611	46,462	35,908	3,401
Totals.....	5,052	15,834,924	6,899,639	14,650,919	7,748,147	925,648

¹ Includes sub-branches and sub-agencies. insured under the National Housing Act, 1954.

² Includes mortgages and hypothecs



This modern glass-fronted branch bank is located in a shopping centre. Suburbanites can do their shopping and banking in a single trip.



Strictly functional, this bank serves the workers and their families at the Port Cartier mining development in northern Quebec.

The most northern branch bank on the continent, this one at Inuvik, N.W.T., is 120 miles north of the Arctic Circle.



The functions of a central bank in Canada are performed by the Bank of Canada, a government-owned agency established in 1934 for the purpose of regulating credit and currency in the best interests of the economic life of the country. Control of the money supply of the country, of which deposits at the chartered banks are a very large part, rests on the requirement that the chartered banks must keep a minimum amount of cash reserves in relation to their deposit liabilities. These reserves consist of Bank of Canada notes (the ordinary circulating paper money of the country) and of deposits at the Bank of Canada. The central bank may also buy and sell securities on the open market with a view to influencing the chartered banks' cash reserves and to maintaining orderly markets for government securities. Because of the influence of external economic conditions on the state of the Canadian economy, the central bank must give a great deal of consideration, in the formulation of its policies, to Canada's external position as well as to domestic conditions. The Bank is managed by a Board of Directors appointed by the Government.



One of many Canadian branch banks on foreign soil, this one is in the West Indies.

The Industrial Development Bank, established in 1944, is a subsidiary of the Bank of Canada but operates as a separate entity. Its function is to supplement the activities of the chartered banks and other lending agencies by supplying the medium- and long-term capital needs of small enterprises; it does not engage in the business of deposit banking.

In addition to the chartered banks, there are several other types of savings banks in Canada: trust and loan companies; the Post Office Savings Bank in which deposits are a direct obligation of the Government of Canada; provincial savings banks in Newfoundland, Ontario and Alberta where the depositor becomes a direct creditor of the province; two savings banks in the province of Quebec established under federal legislation; and credit unions which are co-operative savings and loan organizations.

The credit union is, by far, the most important to the general public, as it is used by 13 p.c. of the total population. It is a self-help movement in which small savings of 2,212,698 individuals have resulted in assets of more than \$1,000,000,000. Loans are granted for provident and productive purposes from the accumulated pooled savings of the members; in 1958, loans totalled \$394,187,000.

In 1958 Canada had 4,436 chartered credit unions. Membership, of which more than half is in the province of Quebec, increased by 7 p.c. and total assets by 19 p.c. during 1958. Rural credit unions represent 38 p.c. of all credit unions.

There are 27 provincial central credit unions in all ten provinces. These act as credit unions for credit unions, in that they accept deposits of surplus funds from credit unions and provide a source of funds for them to borrow when necessary. Some restrict their membership to credit unions; others also admit co-operatives as members. In 1958 the membership in the 27 centrals consisted of 4,265 credit unions and 711 co-operatives, and total assets amounted to \$126,000,000, an increase of 23 p.c. over the previous year.

Growth of Credit Unions—Canada, 1920-1958

Year	Provinces	Credit Unions Chartered	Members	Members as a Percentage of Total Population	Assets
		No.		p.c.	\$'000,000
1920 ^a	1	113	31,752	—	6
1925 ^a	1	122	33,279	—	8
1930 ^b	2	179	45,767	—	11
1935 ^c	3	277	52,045	—	10
1940	9	1,167	201,137	1.8	25
1945	9	2,219	590,794	4.9	146
1950 ^d	10	2,965	1,036,175	7.5	312
1955	10	4,100	1,731,328	11.1	653
1956	10	4,258	1,870,277	11.6	761
1957 ^e	10	4,349	2,059,835	12.6	846
1958 ^f	10	4,436	2,212,698	13.0	1,008

^a Quebec only.^b Quebec and Ontario.^c Quebec, Ontario and Nova Scotia.^d Newfoundland included for the first time.^e Revised for Ontario.^f Estimated for Ontario.

Insurance

Canadians own more life insurance in relation to national income than the people of any other country. Available to them are the services of 54 Canadian, 38 United States, 14 British and three European life insurance companies, with 37,980 employees. These companies make full annual returns on their business to the federal Department of Insurance, which is primarily concerned with the solvency of Dominion-registered companies. There are 26 officially prescribed classes of insurance, and insurance companies must make a deposit with the Department of Insurance for each class they select, depositing additional reserve funds in proportion to the amount of the premiums. Companies not registered by the Federal Government are supervised by the provinces in which they are licensed. Uniformity of the provincial laws governing insurance is continually under discussion by the Association of Superintendents of Insurance of the Provinces of Canada which meets formally at least once a year.

Insurance has made a notable contribution to the economy of Canada, as the excess of premiums over benefits is invested in the capital market to earn interest for policy-holders until required to pay benefits. Hence policy-holders' funds have been an important factor in financing the building of homes and highways, pipelines and public utilities. Such funds have also financed approximately 45 p.c. of Canadian corporate bonds, 27 p.c. of municipal bonds, 15 p.c. of provincial bonds, and 32 p.c. of mortgages.

In Canada, insurance is supplied primarily by two major sources—joint-stock companies and mutuals. In the joint-stock company the capital is supplied and the risk assumed by the shareholders. In mutual companies, the financial support comes from the policy-holders, who also bear the risk of loss. There are also a number of fraternal benefit societies issuing insurance, and the provincial governments of Alberta and Saskatchewan have engaged to some extent in the insurance business.

At Dec. 31, 1958, 10,128,158 life insurance policies were in force, with a total value of \$36,496,000,000. Premiums paid during 1958 totalled \$648,513,585 and claims amounting to \$233,007,987 were paid. About one

third of the claims were death benefits; the remainder went to living policyholders in the form of matured endowments, annuities, disability benefits, cash surrender value and policy dividends.

Fire and casualty insurance was transacted by 282 companies registered by the Federal Government. An additional nine companies transact fire insurance only, and another 85 companies transact casualty insurance only. There were, in addition, 23 registered fraternal benefit societies transacting accident and sickness insurance, of which 20 also transacted life insurance. There are also some provincially licensed fire and casualty insurance companies.

During 1958, fire insurance premiums totalled \$210,207,158 and claims amounted to \$108,523,187. Total premiums for casualty insurance were \$531,962,152 and claims came to \$328,014,057. Casualty insurance may be taken out against accident and sickness, damage to real and personal property, theft, forgery, natural disasters such as earthquake, hail and windstorm, and other hazards.



That section of Bloor St., Toronto, known as Insurance Row. 1. Crown Life Insurance Company. 2. Continental Companies Building. 3. Manufacturers Life Insurance Company. 4. Confederation Life Association. 5. Staff house, with cafeteria and recreation rooms for employees of the Confederation Life Association.

Investment funds are still pouring into the pulp and paper industry. This new 500-ton a day plant in British Columbia will be completed in 1961.



Investment

Present investment plans, both private and public, call for capital outlays of \$8,800,000,000 in 1960, the largest on record, comparing with a previous record of \$8,700,000,000 in 1957, and 4 p.c. higher than the level reached last year. Outlays on construction are expected to be the highest ever achieved and moderately in excess of the level of the past few years. Expenditures for machinery and equipment are expected to make a significant gain over those made in 1958 and 1959 and approach the record achieved in 1957.

The moderate increase in total investment expected in 1960 involves some change in its composition. Business investment had fallen sharply in 1958 and continued to ease in 1959, with the result that the emphasis shifted to housing and social capital, which together accounted for 43 p.c. of the total in 1959. With the resurgence in business investment and the expected slight decline in outlays for housing, expenditures for social capital, which are expected to rise by 1 p.c., are likely to represent 42 p.c. of the program in 1960, compared with 37 p.c. in 1956.

Capital Expenditures, 1950-60

Year	Construction	Machinery and Equipment	Total	Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	
1950.....	2,453	1,483	3,936	21.9
1951.....	2,871	1,868	4,739	22.4
1952.....	3,434	2,057	5,491	22.9
1953.....	3,756	2,220	5,976	23.9
1954.....	3,737	1,984	5,721	23.0
1955.....	4,169	2,075	6,244	23.0
1956.....	5,273	2,761	8,034	26.3
1957.....	5,784	2,933	8,717	27.4
1958.....	5,830	2,534	8,364	25.7
1959.....	5,798	2,613	8,411	24.3
1960.....	5,942	2,828	8,770	—

Within the 6 p.c. planned increase in business investment, the greatest forward impetus comes from the resource-based industries. The forest and mineral products industries are planning about a 20 p.c. increase in outlays. This provides for considerably higher rates of spending for new facilities in base metal mining, the primary iron and steel industries and in the forest-based industries. Notable increases are also anticipated for commercial building, including retail outlets and office buildings. Likewise, secondary manufacturing industries expect to enlarge significantly their investment this year. On the other hand, programs in fuel and power and transportation and communication, as planned at present, are on about the same scale as in 1959.

Capital expenditures in primary industry in 1960 are expected to be \$1,040,000,000, 10 p.c. higher than in 1959, but well below the peak of \$1,106,000,000 in 1956. Higher outlays are expected for all three component groups, agriculture and fishing, mining, quarrying and oil wells, and forestry.

At its peak in 1957, the capital program carried out by the utilities amounted to \$2,300,000,000 and represented more than one quarter of the nation's outlays for new facilities; as major projects for waterways, electric power and pipelines moved toward completion, capital expenditures in this sector fell sharply in the two following years. In 1960, the utilities plan to spend \$1,800,000,000, almost as much as in the preceding year. This virtually unchanged total mainly reflects an expansion in outlays for telephones, for "other" utilities (which includes pipelines) and for municipal waterworks, largely offset by a curtailment of outlays by railways, electric power and some other utilities.

The downward trend in capital outlays in manufacturing industries is expected to be reversed in 1960, bringing the total up to \$1,196,000,000, more than 11 p.c. higher than in 1959. Planned outlays for 1960 compare with a peak of \$1,479,000,000 in 1957. Much the largest part of the planned increase in outlays is in the non-durable goods industries; outlays in the durable group are expected to be only moderately higher.

Of the major industries, the greatest increase in capital outlays is expected in paper products and chemicals. Both are groups where capital outlays have shown wide year-to-year variations. Proposed outlays of \$170,000,000 in the paper products industry, 40 p.c. higher than realized in 1959, compare with a peak of \$266,000,000 in 1956. In chemicals outlays are expected to rise to \$121,000,000, 63 p.c. more than in 1959 but below the peak of \$150,000,000 so spent in 1957.

Preliminary estimates of Canada's 1959 construction program indicate a level of activity similar to the two previous years, with \$7,023,000,000 being spent in 1957 for both new structures and repairs to existing facilities, \$7,092,000,000 in 1958 and \$7,127,000,000 in 1959. At the present time the program for 1960 is expected to be some 2½ p.c. greater than in the previous year.

The 1959 program gained in most structures over the previous year but these gains were offset by substantial declines in marine construction and gas pipelines due to the completion of work on the St. Lawrence Seaway and Trans Canada Pipeline projects. The increases in spending for 1960 are concentrated in the non-residential building structures, with engineering and residential construction expected to be about level in the two years,

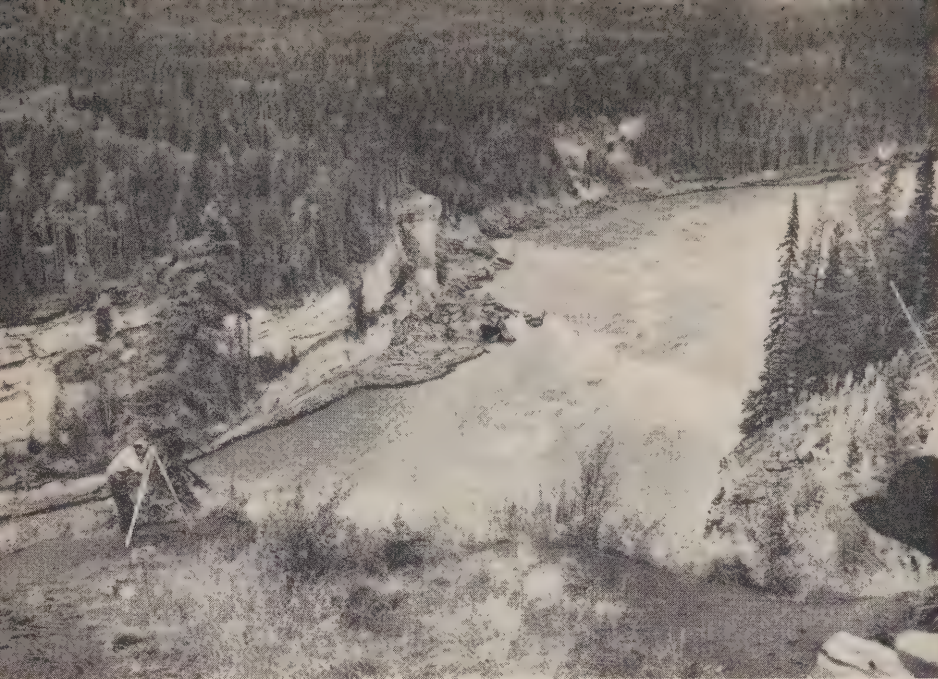
1959 and 1960. Within the engineering category, moderate increases in road building, the construction of water and sewer works and in telephone facilities will be offset by equally moderate declines in marine and railway construction and in the building of power facilities.

The present estimates provide for a further decline in residential construction in 1960. It is estimated that the number of new housing units started this year will be from 10 to 15 p.c. fewer than the 141,000 starts of 1959. However, with 82,000 units under construction at the start of the year, completions are expected to be close to last year's level of 146,000. In terms of the value of housing put in place in 1960, this will involve a decline of about 4 p.c. from that of 1959.

Private and Public Capital Expenditures, by Type of Enterprise, 1958-60

NOTE.—1958 figures are actual expenditures, 1959 figures are preliminary and 1960 figures are forecasts.

Type of Enterprise		Construction	Machinery and Equipment	Total
		\$'000,000	\$'000,000	\$'000,000
Agriculture and Fishing.....	1958	174	497	671
	1959	193	589	782
	1960	195	610	805
Forestry.....	1958	35	39	74
	1959	36	50	86
	1960	45	58	103
Mining, Quarrying and Oil Wells...	1958	266	175	441
	1959	287	158	445
	1960	342	166	508
Manufacturing.....	1958	508	1,159	1,667
	1959	474	1,203	1,677
	1960	470	1,330	1,800
Utilities.....	1958	1,655	1,148	2,803
	1959	1,425	1,107	2,532
	1960	1,420	1,120	2,540
Construction Industry.....	1958	20	259	279
	1959	20	286	306
	1960	21	292	313
Housing.....	1958	2,189	—	2,189
	1959	2,190	—	2,190
	1960	2,153	—	2,153
Trade—Wholesale and Retail.....	1958	230	194	424
	1959	206	193	399
	1960	217	211	428
Finance, Insurance and Real Estate.	1958	162	36	198
	1959	216	46	262
	1960	267	53	320
Commercial Services.....	1958	67	162	229
	1959	71	170	241
	1960	71	177	248
Institutional Services.....	1958	506	65	571
	1959	527	67	594
	1960	613	78	691
Government Departments.....	1958	1,280	152	1,432
	1959	1,482	164	1,646
	1960	1,502	174	1,676
Totals.....	1958	7,092	3,886	10,978
	1959	7,127	4,033	11,160
	1960	7,316	4,269	11,585



These beautiful rapids are the site of the larger of two dams for the Peace River power development.

Private and Public Capital Expenditures, by Province, 1958-60

NOTE.—1958 figures are actual expenditures, 1959 figures are preliminary, and 1960 figures are forecasts.

		Capital and Repair Expenditures		
		Construction	Machinery and Equipment	Total
		\$'000,000	\$'000,000	\$'000,000
Newfoundland.....	1958	96	40	136
	1959	96	43	139
	1960	102	40	142
Prince Edward Island.....	1958	20	19	39
	1959	28	16	44
	1960	26	14	40
Nova Scotia.....	1958	160	99	259
	1959	185	99	284
	1960	198	101	299
New Brunswick... ..	1958	166	81	247
	1959	190	95	285
	1960	185	90	275
Quebec.....	1958	1,732	963	2,695
	1959	1,823	975	2,798
	1960	1,777	1,039	2,816
Ontario.....	1958	2,598	1,482	4,080
	1959	2,422	1,532	3,954
	1960	2,546	1,637	4,183
Manitoba.....	1958	345	205	550
	1959	410	227	637
	1960	400	229	629
Saskatchewan.....	1958	383	240	623
	1959	342	270	612
	1960	379	249	628
Alberta.....	1958	786	342	1,128
	1959	817	377	1,194
	1960	878	402	1,280
British Columbia ¹	1958	804	416	1,220
	1959	815	402	1,217
	1960	824	466	1,290

¹ Includes Northwest Territories and Yukon.

Value of Construction Work Performed, 1955-60

NOTE.—1955-58 figures are actual, 1959 figures are preliminary and 1960 figures are forecasts.

Year	New	Repair	Total	Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	
1955.....	4,167	1,141	5,308	19.6
1956.....	5,272	1,182	6,454	21.4
1957.....	5,785	1,238	7,023	22.3
1958.....	5,831	1,261	7,092	21.8
1959.....	5,797	1,331	7,129	20.6
1960.....	5,939	1,378	7,317	—

Value of New and Repair Construction Work Performed, 1958-60

NOTE.—1958 figures are actual, 1959 figures are preliminary and 1960 figures are forecasts.

Item	1958		1959		1960	
	New	Repair	New	Repair	New	Repair
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Building.....	3,338	764	3,453	801	3,599	827
Residential.....	1,782	407	1,759	431	1,696	457
Industrial.....	287	108	297	115	327	117
Commercial.....	589	99	664	97	758	94
Institutional.....	493	57	511	61	605	61
Other.....	186	92	223	98	213	98
Engineering.....	2,494	497	2,344	530	2,341	550
Roads, highways and aerodromes.....	543	168	606	183	595	190
Waterworks and sewage systems.....	170	28	185	32	209	32
Dams and irrigation.....	43	7	37	8	37	8
Electric power construction.....	457	44	400	48	372	51
Railway, telephone and telegraph construction.....	250	152	301	158	286	168
Gas and oil facilities.....	611	39	421	40	474	40
Marine construction.....	140	15	99	15	93	13
Other engineering.....	280	43	296	46	276	48
Totals.....	5,831	1,261	5,797	1,331	5,939	1,378



Workmen joining 12-ton sections of concrete pipe which will carry water from Lake Ontario for the \$250,000,000 Lakeview thermal station, destined to become one of the world's largest thermal-electric power plants. By the mid-1960's it will be producing at the rate of 1,800,000 kw.



The suburban shopping centre, a post-war phenomenon that grew out of the flight from the city on the part of householders. Advantages are free, unlimited parking, a variety of retail outlets, easy accessibility.

The Canadian Economy in 1959

THE year 1959 brought an expansion of economic activity in the major industrial countries of the world including the United States. Thus the international climate favoured renewed growth in Canada, following the hesitation and uncertainty that characterized much of the two preceding years. By the closing quarter of 1958 there was widespread evidence of recovery and the tempo of activity continued to quicken in the first half of 1959. The pace of expansion was retarded in the third quarter, partly as a result of industrial disputes in Canada and the United States, but the closing quarter was one of renewed vigour. For the year as a whole gross national product reached an all-time high of \$34,593,000,000, about 6 p.c. higher than in 1958. With prices somewhat higher, the physical volume of output rose by about 4 p.c., which compares with unchanged output in 1957 and 1958 and a post-war average of 4 p.c. per year.

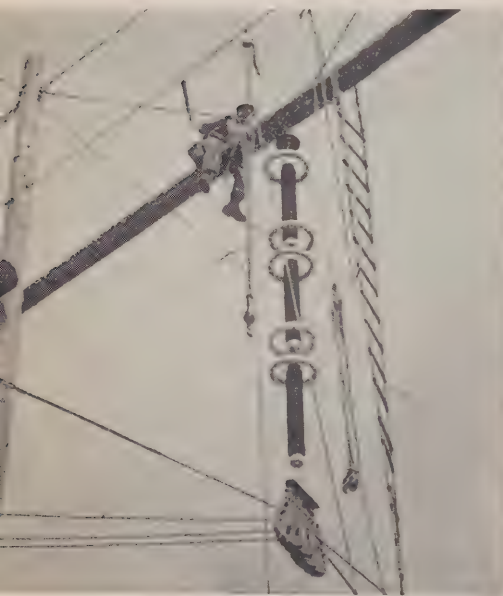
The advance in national production in 1959 was accompanied by broad changes in the composition of demand and in the patterns of income. The trend of important components of expenditure was reversed during the course of the year and renewed strength in the private sector was reflected in the components of income and in the flows of income between the private and the public sector.

Whereas in 1958 sales were being met in part from stocks which were not being replenished from current production, in 1959 the building up of stocks was adding considerably to the demands on domestic resources and imports. The shift from liquidation to accumulation of business inventories amounted to about \$700,000,000 additional demand. The downward trend in business expenditures for plant and equipment was reversed during the course of the year and outlays for the year as a whole were unchanged, in contrast to a decline of 12 p.c. in the previous year; outlays for new housing receded a little from the very high level of the preceding year. Exports of goods and services, which had been no more than maintained in the two preceding years, advanced about 5 p.c. in 1959. At the same time, imports of goods and services, which were down sharply during the recession period, began to rise in the latter part of 1958 and in 1959 were $9\frac{1}{2}$ p.c. higher than in the previous year. Thus the year brought a decided widening of the deficit on international current account. Consumer expenditure rose somewhat more than in 1958 and, with more moderate pressure on prices in the consumer sector, the gain in the volume of consumption was considerably larger. On the other hand, the rise in government expenditure in 1959 was significantly smaller than in 1958.

The recovery in production and employment in 1959 raised labour income 8 p.c. in contrast to little change in 1958; it pushed up corporate



Long Sault dam on the St. Lawrence Seaway.



Red Rock Falls on the Mississagi River in northern  Ontario.

Research into test facilities installed by Ottawa Hydro will have a bearing on long-term planning for hydro-power development far distant from consuming localities.



profits 14 p.c., bringing them close to their 1956 peak. At the same time, transfer payments rose only 5 p.c., in contrast to an advance of 28 p.c. in the preceding year. Thus, in 1959, the rise in national income closely matched the rise in personal income.

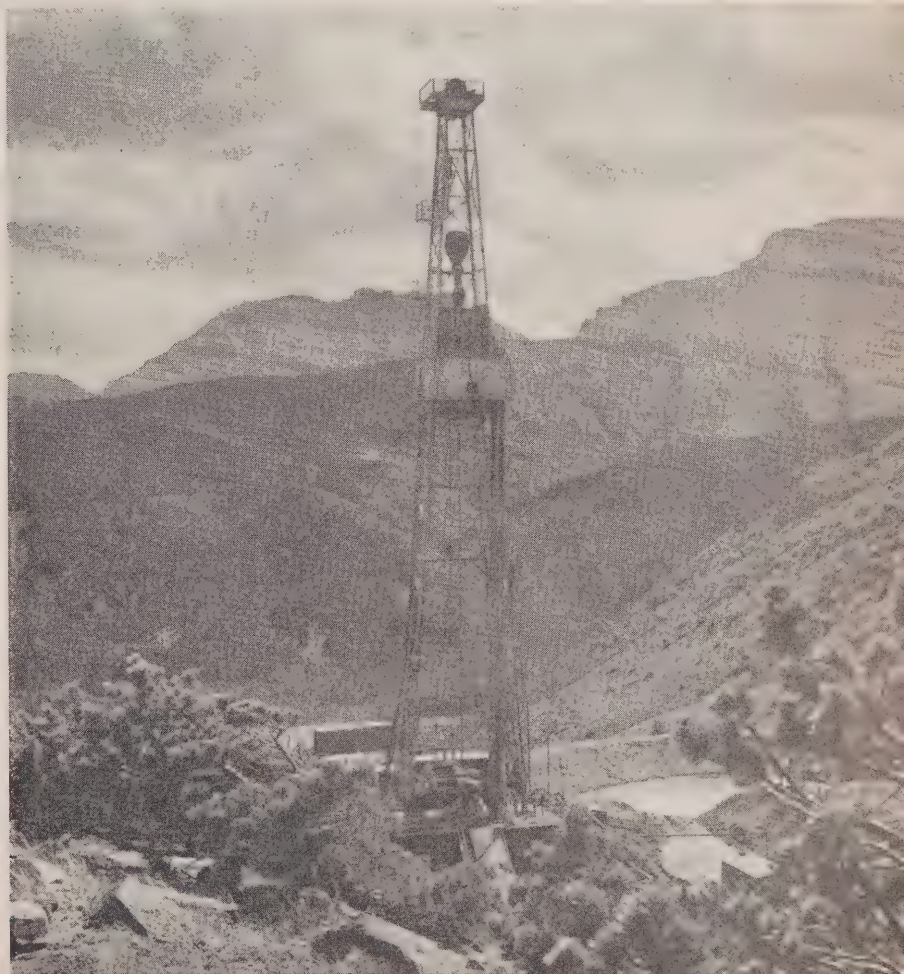
The progress of recovery and expansion was reflected in government revenues. Tax collections and accruals responded to the advance in production, employment and earnings, the sharply reversed trend in profits and the higher level of sales and imports. Increases in tax rates operated in the same direction. In this situation, revenues of all governments combined rose more than 13 p.c., in contrast to only 2 p.c. in 1958.

The Changing Pattern of Demand

Business expenditures for plant and equipment, reversing their previous down-trend, became an expansionary influence during the course of the year; outlays for new facilities were \$5,218,000,000, virtually the same as in 1958. The resurgence of expenditures on machinery and equipment was particularly striking. Following the completion of some large projects, such as pipelines and the St. Lawrence Seaway, expenditures on construction were considerably lower. Much of the strength in investment came from the continued expansion in outlays for new facilities in financial and commercial services and for such institutions as schools and universities. At the same time, the precipitous decline in outlays by manufacturing industries, characteristic of 1958, was virtually brought to a halt. There was a major advance in outlays by government departments.

A greatly increased flow of mortgage funds from government and private sources had supported a high and rising level of housebuilding in 1958. Houses started numbered 165,000 units and houses completed 147,000 units, both unprecedentedly high figures. Limitations on the supply of mortgage funds and, possibly, more selective demand prevented a further expansion of housing in 1959. Outlays of \$1,743,000,000 in 1959 were slightly lower than in 1958 and starts of 141,000 units compare with the record set out above; the number of units completed was about the same as in the previous year.

Large-scale reserves of natural gas in the Waterton Lakes field are earmarked for export pending government approval.





Spearheading every oil search are petroleum geologists who plunge into Canada's hinterland looking for "black gold". In the Rock Lake area of the Alberta foothills, they seek clues to the untapped oil deposits of Canada's wealthiest petroleum province.

A familiar sight in the field of exploration is the helicopter, working with the ground party in mapping and piecing together the geological picture of rock formations.



Business inventories were built up in the amount of \$355,000,000 in 1959, in contrast to liquidation of \$323,000,000 in 1958. This shift of nearly \$700,000,000 was an important factor in the rise in economic activity, accounting for almost one-third of the increase in gross national product. The major part of the shift occurred in manufacturing industries, as durable goods industries in general, and the iron and steel and transportation equipment industries in particular, built up stocks which had been depleted the previous year. Wholesalers and retailers likewise moved from liquidation to accumulation.

The rising trend of merchandise exports throughout the year and the broad commodity base of the advance testify to the growing strength of international demand for Canada's export products. Exports in total rose 5 p.c. and exports to the United States nearly 10 p.c., in contrast to the situation in 1958 when there was no change in total and a slight decline in exports to the United States. The largest contribution to the increase came from metals and minerals and forest products. Iron and its products registered the highest rate of gain of all the main commodity groups, an increase of about one-third as against a decline of one-sixth in 1958. Substantial advances occurred in a wide range of individual products, from iron ore to farm machinery. Among important export commodities, increases occurred in asbestos, wood pulp, copper, nickel, aluminum, fertilizers, and uranium ores and concentrates. Major declines took place in exports of aircraft and cattle.

The rising trend of outlays for machinery and equipment and renewed stockbuilding were important among the factors making for a 9 p.c. increase in merchandise imports. Gains were widespread among the commodity groups but much the largest increases were in machinery, farm and non-farm, and automobiles and parts. The only major decline among the important commodities was in aircraft and parts. Despite the increase, commodity imports in 1959 were not quite up to the peak level of 1956.

With merchandise imports rising more than merchandise exports, the deficit on merchandise account reached \$386,000,000, compared with \$170,000,000 in 1958, but well below the record figure of \$728,000,000 in 1956. The payments on service items rose from \$2,303,000,000 in 1958 to \$2,524,000,000 in 1959, continuing the steady growth typical of recent years. Payments in the form of interest and dividends, for freight and shipping, for business services and on tourist account all increased substantially, reflecting growing foreign indebtedness, higher imports, particularly from overseas countries, and rising activity and incomes. Receipts from services also rose, but more moderately—from \$1,442,000,000 to \$1,505,000,000. These changes in the commodity and service accounts raised the current deficit to an all-time high of \$1,400,000,000, compared with one of \$1,000,000,000 in 1958.

The rise in personal income supported a considerable advance in consumption as well as a continuing high rate of personal savings. Consumer expenditure, at \$22,261,000,000, was 6 p.c. higher than in 1958. With the rise in consumer prices moderating, the greater part of this increase represented greater real consumption. On a per capita basis, this was the first advance in real consumption since 1956.

The gains were well distributed over the main categories of spending. Spending on non-durables, durables and services rose in roughly the same proportion. One of the important developments of the year was the rise in purchases of automobiles, the largest since 1955. The increase in purchases of British and European models—45 p.c.—was particularly striking; it contrasts with an increase of only 6 p.c. for cars manufactured in Canada or imported from the United States. The rise in consumer spending was accompanied by a considerable expansion of consumer credit.

The Canadian consumer is the ultimate arbiter of the development of the Canadian economy. Where he works and lives, what he buys and borrows, what he wants for his family—these are vital facts of economic life.



Income Flows

The renewed strength of demand was reflected in the flow of income, bringing the gains in national and personal income more closely into line, in contrast to the divergent movements that had characterized the recession period.

Typically sensitive to changes in the tempo of activity, corporate profits turned sharply upward in the latter half of 1958 and remained high during 1959. Almost all industries contributed to the 14 p.c. gain in the total.

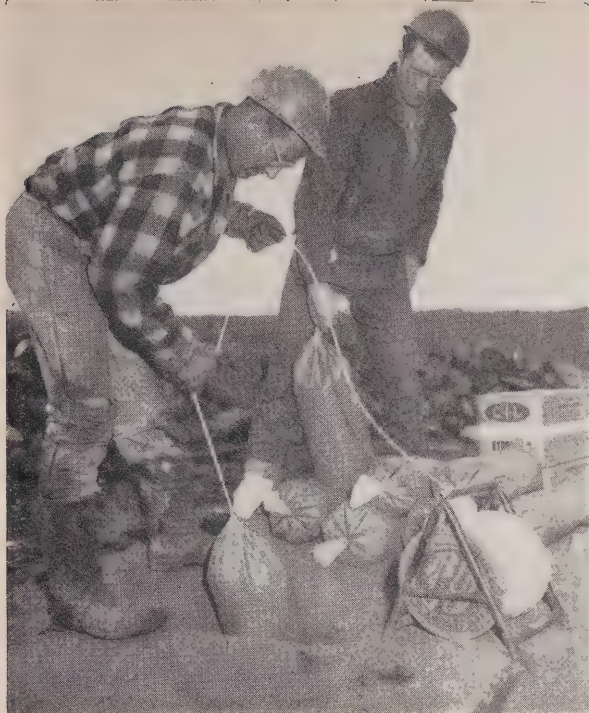
Labour income advanced 8 p.c., following a gain of only 3 p.c. in 1958. About half of this increase represented higher employment and the remainder a further rise in average weekly earnings. All the major industries recorded gains, the largest increases being in the service industries. Personal investment income rose substantially and there was a modest advance in the income of non-farm unincorporated business; farm income was lower than in 1958. Transfer payments rose only 5 p.c. in contrast to 1958, when legislative changes in welfare schemes and larger payments under unemployment insurance combined to raise income from this source by 28 p.c. Thus personal income as a whole was more than 6 p.c. higher, much the same rate of increase as in national income. At the same time, rates of personal income tax were raised, with the result that disposable income rose rather less than 6 p.c.

The structure of taxation makes government revenues quick to respond to changes in activity and incomes. Corporate profits taxes* rose 18 p.c., in contrast to a drop of $3\frac{1}{2}$ p.c. in 1958, personal income taxes rose 16 p.c., following a decline of 6 p.c. in 1958 and indirect taxes rose 10 p.c., after having been unchanged in the previous year. When all sources of government revenue are taken into account, the increase in total was 13 p.c., in contrast to one of 2 p.c. in 1958.

* Corporate profits taxes are measured on an accrual basis.

This asphalt plant, which now uses Saskatchewan crude oil instead of Venezuelan, besides supplying industrial and roofing asphalt, produces enough paving asphalt each day to pave a two-lane highway 14 miles long.





In this age of great earth and rock moving projects, an efficient explosive is of major importance in construction, quarrying and submarine blasting.

Production and Employment

Almost all major industry divisions contributed to the increase in output in 1959, the largest increases being in forestry, mining and public utilities. This almost uniformly upward trend in 1959 contrasts with the situation in 1958 when trends were mixed and largely offsetting.

Among the primary industries, production in forestry was up 9 p.c. in 1959, entirely as a result of the increased output of pulpwood; output of other forest products was down slightly. The improvement in markets for some traditional metals and

minerals and further increases in output in the new resource industries raised mining production by 10 p.c.

Production in manufacturing industries was higher by about 7 p.c., the larger part of the gain being in the durable goods industries. All major industry divisions except transportation equipment shared in the gain, the largest increases being in iron and steel products, rubber products, textiles, products of petroleum and coal and non-metallic mineral products.

The big increase in output in public utilities mainly reflected the huge increase in distribution of natural gas following the completion of pipelines.

All the service-producing industries increased their output. So far as transportation, communication and storage are concerned, this was a reversal of trend. The goods-handling industries, like the goods-producing industries, felt the impact of recession in 1958 and of recovery in 1959.

These increases in production were accompanied by a higher level of employment. The number of persons with jobs rose 3 p.c., compared with a 4 p.c. gain in the physical volume of production, which implies some improvement in output per worker.

The National Energy Board, created in July, 1959, is the licensing and controlling authority over the import and export of energy and sources of energy, such as natural gas, oil and electric power.



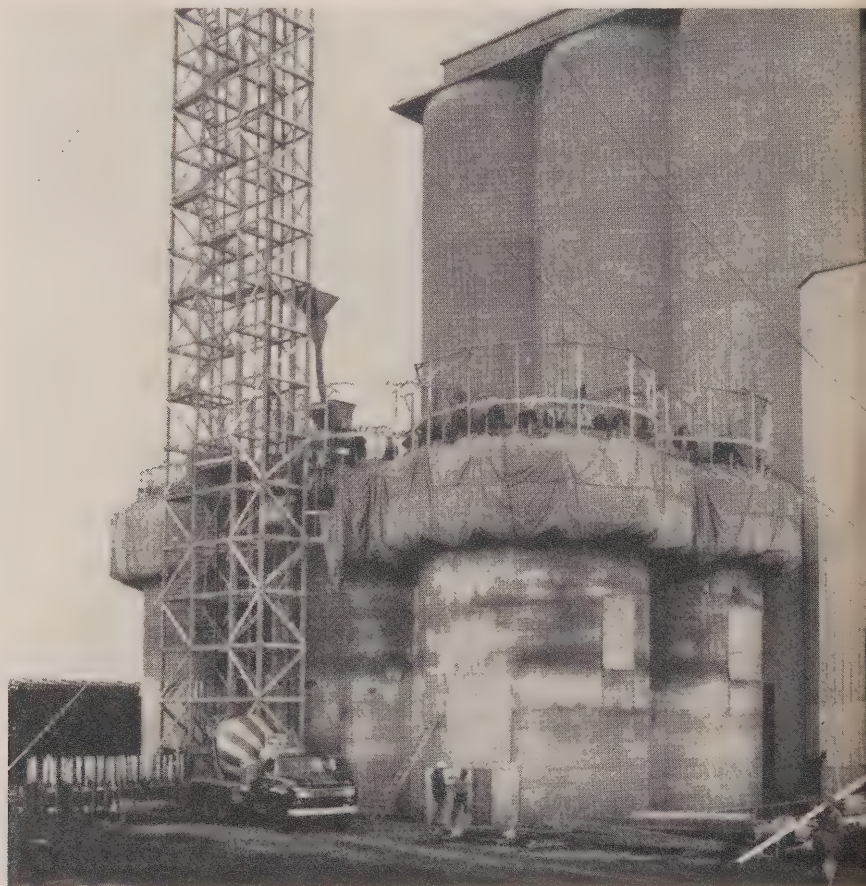
National Income and Gross National Product, Selected Years 1939-59

(Millions of Dollars)

Item	1939	1946	1950	1956	1957	1958	1959
Income							
Wages, salaries and supplementary labour income.....	2,601	5,487	8,629	14,890	15,996	16,434	17,717
Military pay and allowances....	32	340	137	424	476	491	496
Corporation profits before taxes ¹	521	1,269	2,118	2,908	2,547	2,483	2,836
Rent, interest and miscellaneous investment income.....	301	581	890	1,767	1,905	2,015	2,094
Accrued net income of farm operators from farm production....	362	1,056	1,322	1,450	996	1,193	1,108
Net income of non-farm unincorporated business including independent professional practitioners.....	475	1,072	1,439	1,965	2,011	2,119	2,150
Inventory valuation adjustment.	-56	-254	-374	-238	-71	-33	-120
Net National Income at Factor Cost.....	4,236	9,551	14,161	23,166	23,860	24,702	26,281
Indirect taxes less subsidies.....	734	1,270	2,000	3,636	3,848	3,883	4,220
Capital consumption allowances and miscellaneous valuation adjustments.....	637	998	1,913	3,642	3,994	3,923	4,131
Residual error of estimate.....	29	31	-68	141	71	98	-39
Gross National Product at Market Prices.....	5,636	11,850	18,006	30,585	31,773	32,606	34,593

¹ Excludes dividends paid to non-residents.

Six cement-storage silos, each 25 ft. in diameter and with a capacity of 1,700 tons, are under construction in Edmonton by a unique method called the slip-form or moving-form.





New skyscrapers of aluminum-clad steel added to the forest of towers at a Sarnia refinery step up its capacity from 30,000 to 50,000 barrels of crude oil a day.

Gross National Expenditure, Selected Years 1939-59

(Millions of Dollars)

Item	1939	1946	1950	1956	1957	1958	1959
Personal expenditure on consumer goods and services.....	3,984	8,031	12,026	18,833	19,964	21,035	22,261
Government expenditure on goods and services ¹	683	1,796	2,344	5,386	5,738	6,161	6,437
Business gross fixed capital formation: ²							
New residential construction..	174	368	883	1,526	1,409	1,763	1,743
New non-residential construction.....	164	435	1,042	2,589	3,103	2,811	2,592
New machinery and equipment	254	585	1,423	2,659	2,823	2,401	2,626
Value of physical change in inventories:							
Non-farm business inventories	101	360	399	808	311	-323	355
Farm inventories and grain in commercial channels.....	181	-27	151	276	-101	-112	-55
Exports of goods and services...	1,451	3,210	4,183	6,365	6,394	6,332	6,657
Less: Imports of goods and services.....	-1,328	-2,877	-4,513	-7,715	-7,796	-7,363	-8,062
Residual error of estimate.....	-28	-31	68	-142	-72	-99	39
Gross National Expenditure at Market Prices.....	5,636	11,850	18,006	30,585	31,773	32,606	34,593

¹ Includes outlays on new durable assets such as building and highway construction by governments, other than government business enterprises; includes also net purchase of government commodity agencies.

² Includes capital expenditures by private and government business enterprises, private non-commercial institutions and outlays on new residential construction by individuals and business investors.

Source of Personal Income, Selected Years 1939-59

(Millions of Dollars)

Source	1939	1946	1950	1956	1957	1958	1959
Wages, salaries and supplementary labour income.....	2,601	5,487	8,629	14,890	15,996	16,434	17,717
Less: Employer and employee contributions to social insurance and government pension funds.....	-35	-149	-256	-532	-589	-614	-664
Military pay and allowances....	32	340	137	424	476	491	496
Net income received by farm operators from farm production ¹	412	1,034	1,156	1,430	1,002	1,197	1,116
Net income of non-farm unincorporated business.....	475	1,072	1,439	1,965	2,011	2,119	2,150
Interest, dividends and net rental income of persons.....	570	817	1,268	1,908	2,013	2,120	2,300
Transfer payments to persons:							
From government (excluding interest).....	229	1,106	1,030	1,766	2,079	2,657	2,785
Charitable contributions by corporations.....	6	12	25	34	36	36	40
Personal Income.....	4,290	9,719	13,429	21,885	23,024	24,440	25,940

¹ This item differs from item five of the table on p. 244 in that it excludes the adjustment to take account of accrued net earnings arising out of the operations of the Canadian Wheat Board.

Disposition of Personal Income, Selected Years 1939-59

(Millions of Dollars)

Disposition	1939	1946	1950	1956	1957	1958	1959
Personal Direct Taxes:							
Income taxes.....	62	711	612	1,496	1,693	1,555	1,747
Succession duties.....	28	54	66	146	126	126	130
Miscellaneous.....	22	31	62	90	98	113	211
Total Personal Direct Taxes.....	112	796	740	1,732	1,917	1,794	2,088
Personal Expenditure on Consumer Goods and Services:							
Non-durable goods.....	2,186	4,829	6,711	9,736	10,357	10,853	11,400
Durable goods.....	312	596	1,451	2,431	2,431	2,500	2,658
Services.....	1,486	2,606	3,864	6,666	7,176	7,682	8,203
Total Personal Expenditure on Consumer Goods and Services.....	3,984	8,031	12,026	18,833	19,964	21,035	22,261
Personal Saving:							
Personal saving excluding farm inventory change.....	140	878	583	1,079	1,295	1,690	1,658
Value of physical change in farm inventories.....	54	14	79	241	-152	-79	-67
Total Personal Saving.....	194	892	662	1,320	1,143	1,611	1,591
Personal Income.....	4,290	9,719	13,429	21,885	23,024	24,440	25,940
Personal Disposable Income ¹ ...	4,178	8,923	12,688	20,153	21,107	22,646	23,852

¹ Personal income less total personal direct taxes.



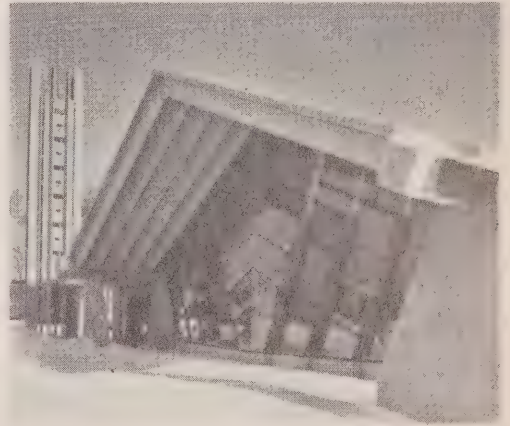
North York Public Library, Metropolitan Toronto.



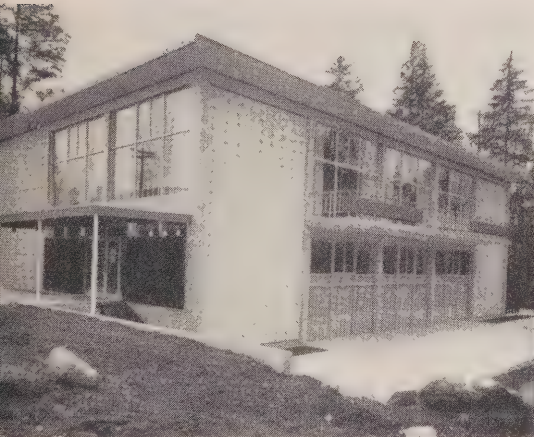
Uplands Airport, Ottawa.

Canadian architects, while continuing in the modern classic trend toward clean, functional lines and ingenious use of new building materials, are also beginning to develop regional styles. Perhaps the most clearly defined is that of British Columbia, generally categorized as West Coast romanticism.

More attention is being paid to decoration as well as to beauty of design: murals, fountains, reflecting pools, mosaics and sculptural façades are making their appearance, and imaginative exploitation of natural features of sites distinguishes many new buildings. The "glass skin-and-bone" school of architecture is gradually giving way to the more traditional style embodying the play of light and shadow on masonry surfaces.



St. Paul's Presbyterian Church, Ottawa.

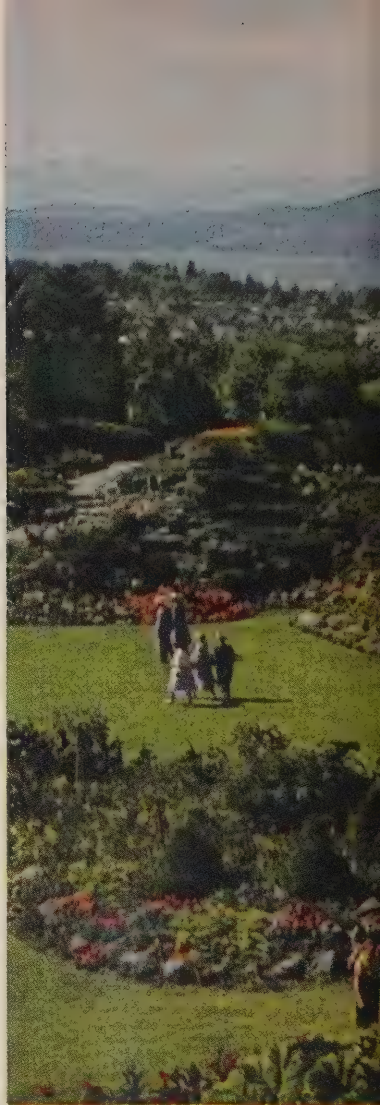


Faculty Club and International House, University of British Columbia, Vancouver.

The Social Sphere

TODAY, and increasingly as time goes on, man finds himself his brother's keeper. Not only in his physical organization, but in the satisfaction of his needs for spiritual, social, intellectual and emotional experiences, man is deeply dependent on the human resources of his environment.

Barring the devastation of a thermonuclear war, the Canadian baby born today can expect to receive a complete education suited to his abilities, a considerable measure of health care, hospital treatment, sports and social activities, financial protection against physical disability or unemployment or injury at work and, in his later years, retirement income,—all provided from community funds. Freed from many of the financial fears of even a generation ago and with more leisure time than any of their forebears could enjoy, Canadians are increasingly busying themselves with interests of their choice. Tens of thousands of adults flock to night schools, public lectures, and exhibits; hundreds of thousands visit art galleries, attend plays, operas, concerts of all kinds. Canadians are sports lovers, both as participants and as spectators; they love to travel and they revel in the great playground of the outdoors. The development of the "do-it-yourself" fashion is reflected in the appearance of many hobby shops and "how-to" books and magazines. Collectively and for their mutual benefit, they build hospitals and auditoriums, civic centres, churches and parks; they vie for theatrical and musical and athletic awards; they stock public libraries and support welfare agencies. Although they know more about each other than their parents ever did, they retain strong local individualities. The robust humour of the French-Canadian habitant is as far removed from the breezy ebullience of the westerner as the reserve of the native Maritimer is from the conscious pride of the British Columbian. The post-war wave of immigration has added to the Canadian way of life a kaleidoscopic variety of new ideas and arts and skills. Like parents all over the world, Canadians want more for their children—more education, better health, greater satisfaction from life—than they ever had themselves. Energetically and enthusiastically, they are going about providing it.

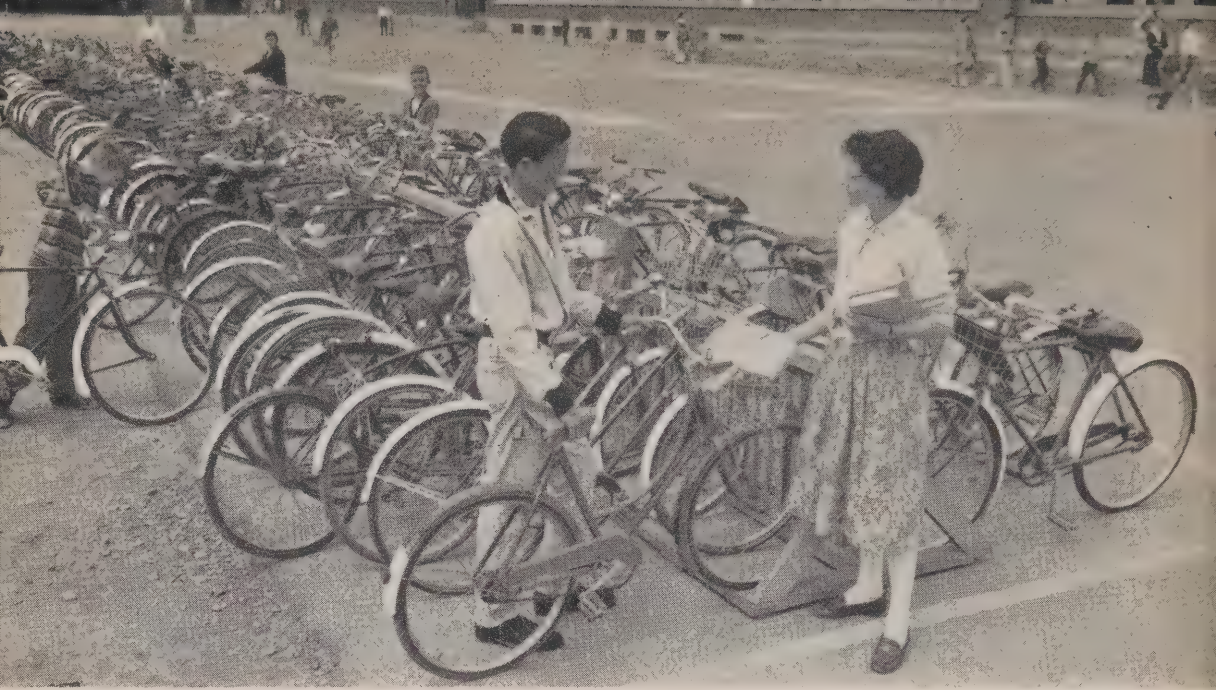




Education

In September, 1959, 3,608,000 full-time students registered in Canadian schools and universities. Of these, more than 425,000 enrolled in Grade 1 to embark on their educational careers: 70 p.c. of them will continue into high school, but only 30 p.c. will achieve junior matriculation and only 18 p.c. senior matriculation. In five provinces, junior matriculation is reached on completion of Grade 11 and senior matriculation on completion of Grade 12. In the others, the junior matriculation grade is 12.

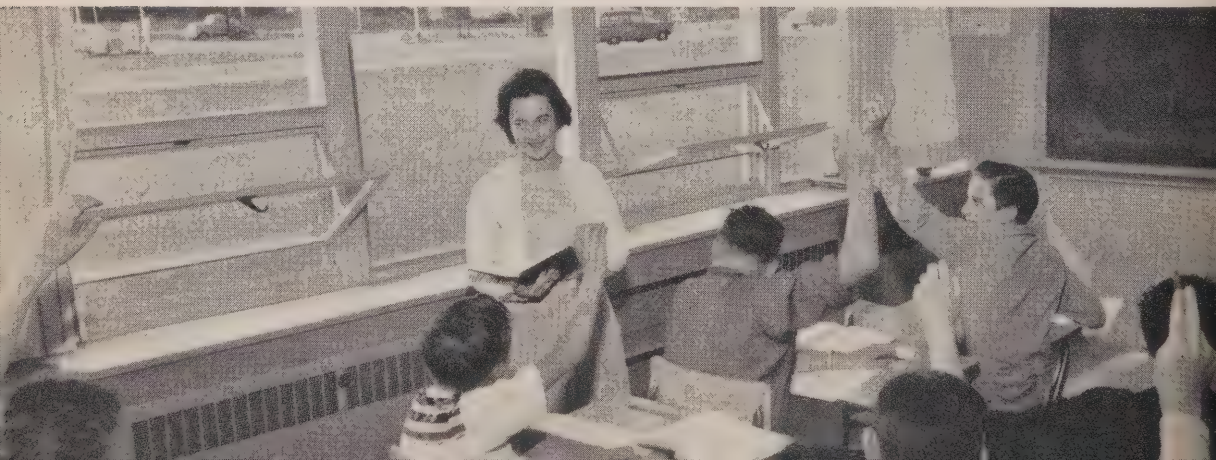
Education is compulsory in Canada from the age of 6 or 7 to 14, 15 or 16, depending on the province in which the child resides. In many provinces there are kindergarten classes within the school system for four- and five-year-olds. The facts that family allowances are only payable on behalf of children who are attending school according to provincial requirements, together with better transportation facilities in the rural areas and organization of schools into larger units, have contributed to a very high level of school attendance.



There is no federal department of education and the average child attends a school which is operated under provincial legislation by local boards of education.

In Quebec, Ontario, Manitoba, Saskatchewan and Alberta there are divided school systems: the "public" or non-denominational schools and the "separate" or denominational (with few exceptions, Roman Catholic) schools. Newfoundland has a public denominational school system, under which the four main religious denominations—Anglican, Roman Catholic, Salvation Army and United Church of Canada, plus several smaller ones—build and operate their own schools under the provincial Department of Education. In all the provinces there are private elementary and secondary schools, both residential and by day, for boys or girls or co-educational. Many of them are denominational—most are Roman Catholic—but there are non-sectarian ones also. Some ethnic groups, such as Chinese and Hebrews, run private schools after the regular schools finish for the day, to provide language, religious and cultural education.

Grade 13 students at a Prescott, Ont. high school may volunteer to relieve regular teachers during short absences, thus gaining experience and saving relief teachers' fees.



In the Yukon Territory, the Y.T. Department of Education operates public and separate schools and the Federal Government operates schools for Indians and Eskimos. In the Northwest Territories, the Federal Government operates schools for Eskimos, Indians and whites.

Various federal government departments provide education for special groups. In addition to the schools in the Northwest Territories operated by the Department of Northern Affairs and National Resources, the Indian Affairs Branch of the Department of Citizenship and Immigration administers schools for Indian children throughout Canada: some of them are operated by religious denominations—Roman Catholic, Anglican or United Church. The Department of National Defence operates schools on military stations in Canada and in Europe for the children of service personnel, in addition to three Canadian Services Colleges in Canada to train personnel. The Department of Justice provides for schooling in the penitentiaries, and the Department of Veterans Affairs has a program of education in veterans' hospitals, as well as correspondence courses for veterans, federal civil servants, and inmates of penitentiaries. Vocational training in the provinces is assisted by the Training Branch of the Department of Labour.

Higher education is aided by federal grants to universities, by the provision of fellowship, scholarship, bursary and loan funds, and by research grants. In the field of adult education, the Federal Government participates through such channels as the Canadian Citizenship Branch of the Department of Citizenship and Immigration, the Canadian Broadcasting Corporation, the National Film Board, the National Museum and the National Gallery.

The elementary schools generally teach the first eight grades and their curricula are fairly standardized. The secondary schools, which teach Grades 9 to 12 or 13, are more and more offering a choice of education: academic, commercial, or industrial with a variety of optional courses. Trade schools and technical institutes are found in most provinces, and all have teacher training schools at the post-matriculation level. In 1958-59, there were 204 teacher training institutions with an enrolment of 19,978.

Young teacher, pupils and a friend outside their 40-ft. trailer school in an isolated valley in British Columbia.



No province is without at least one provincially-controlled university or college, although the great majority of Canadian institutions of higher learning are under religious or independent non-denominational control. Many of these institutions do, however, receive provincial grants for operating and building costs. There were 55 degree-granting universities and colleges in 1958-59, as well as 134 professional schools and 117 arts and science colleges. In the 1959-60 academic year, 102,000 full-time students and an equal number taking part-time, summer or extension courses, were registered at Canadian universities.



A newly renovated theatre in Mills Memorial library and modern projectors for showing slides of famous paintings have greatly assisted fine art classes at McMaster University, Hamilton, Ont.

The Federal Government maintains three military colleges (in British Columbia, Ontario and Quebec) and, in addition, since 1951 has made available to the provinces annual sums for current operating expenses of universities. For the 1959-60 session these grants were based on an amount of \$1.50 per capita and totalled \$26,112,000. Beginning with the 1957-58 academic year, an additional \$50,000,000 was made available, through the Canada Council, to be used for building costs, with the provisions that the money should be matched by the institutions, and that it should be used within ten years. The Canada Council also administers a permanent Endowment Fund of \$50,000,000, which is used to foster and promote the study, enjoyment and production of works in the arts, humanities and social sciences, through a program of grants to scholars, awards for outstanding accomplishments, sponsorship of exhibitions, performances and publications and presentation abroad of Canadian examples of the arts, humanities and social sciences.

To staff the classrooms of Canada's educational institutions, 140,400 teachers were employed, of whom 73 p.c. were women and 27 p.c. men. Together with their students, they made up one-quarter of Canada's population.

Education for Exceptional Children

In every country there are children who, for one reason or another, cannot fit into the general school system, and for whom special programs to meet their unusual educational needs must be devised. Exceptional

children may be mentally gifted or they may be mentally retarded; they may be physically handicapped—the blind or partially-sighted, the deaf and hard-of-hearing, the speech-defective, the cerebral palsied, crippled children and those with chronic or long-term convalescent disabilities; they may be emotionally disturbed. There are also those institutionalized children—orphans, neglected children or delinquents—for whom educational facilities must be supplied.

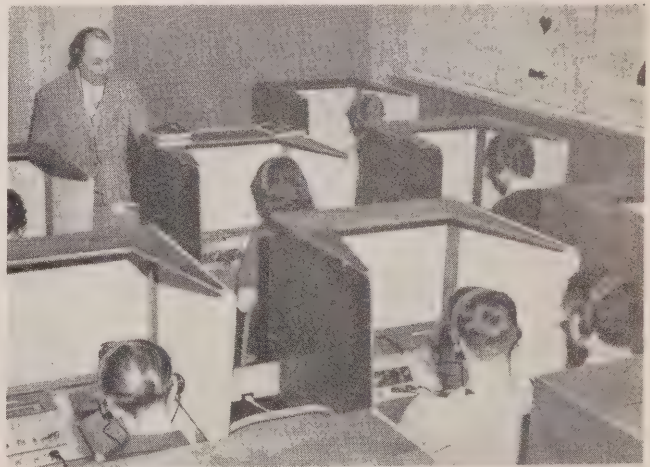
By far the greatest number of exceptional children are the mentally retarded. Eight provincial training schools, with an average daily patient population of 9,880, offer residential care and classroom and trade training to those capable of benefiting from it. Mildly retarded children are served by special classes within the school system, and children who are not accepted in these classes—generally, children with I.Q. below 50—may be able to attend special schools, most of which have been established by branches of the Canadian Association for Retarded Children, and many of which are now assisted by provincial funds. In January, 1959, 3,481 children were attending such day schools.

All provinces are served by residential schools for the blind and for the deaf. For the partially-sighted and the hard-of-hearing, there are sight-saving and special classes in regular public schools in the larger centres. Some provision is made, through streaming, for slow learners and the mentally gifted, in the regular classes. There are also special classes for the physically handicapped, and, in a few larger centres, special classes for the mentally gifted. A number of centres, operated by voluntary groups and, in some cases, aided by national health grants, have been opened for the training of the cerebral palsied. There are a few private and public institutions for the care and education of the emotionally disturbed.

There are programs in many hospitals and tuberculosis sanatoria for the education of long-term patients, including class-room instruction for the up-patients and bedside instruction for the non-ambulatory. Children who are confined to their homes through prolonged illness or disability may be given home instruction by visiting teachers in some provinces.

Throughout Canada, provincial government correspondence courses are available to children who, for reasons of ill-health or geographical location, are unable to attend school or who are gifted children wishing to supplement their regular courses; and to adults who wish to extend their education or training.

A language laboratory at Redwater High School in Alberta uses electronic equipment in teaching Ukrainian and French. Students listen to the recorded half of a dual track tape, then repeat the lesson. On the playback, they can compare their own accent and fluency with the teacher's.



Vocational Education

As Canada moves inexorably toward ever-increasing industrialization, the need for skilled artisans and technicians grows at an equal pace. Since the Second World War, facilities for vocational education—both public and private—have increased rapidly. In 1957-58, more than 120,000 full-time students were enrolled in all types of vocational courses, more than 200,000 took part-time day or evening classes, and more than 8,000 were enrolled in correspondence courses. In addition, the 600 private vocational schools enrolled an estimated 80,000 full-time, part-time and correspondence students.

Public vocational education can be obtained at trade schools, which teach many recognized trades and provide special courses for apprentices; high schools, which offer courses in commerce, industry, home economics, agriculture, applied arts, service occupations and hospital services; and technical institutes where high school graduation is a prerequisite and where the training is technical, generally in the engineering or scientific fields.

On-the-job training is becoming more widespread as more specialized skills are being developed. The armed forces provide training facilities, to obtain the skilled manpower needed to man their establishments and to outfit highly mechanized units, in technical, trade, commercial, medical services and service occupations. In addition, they conduct apprenticeship training through their cadet corps.

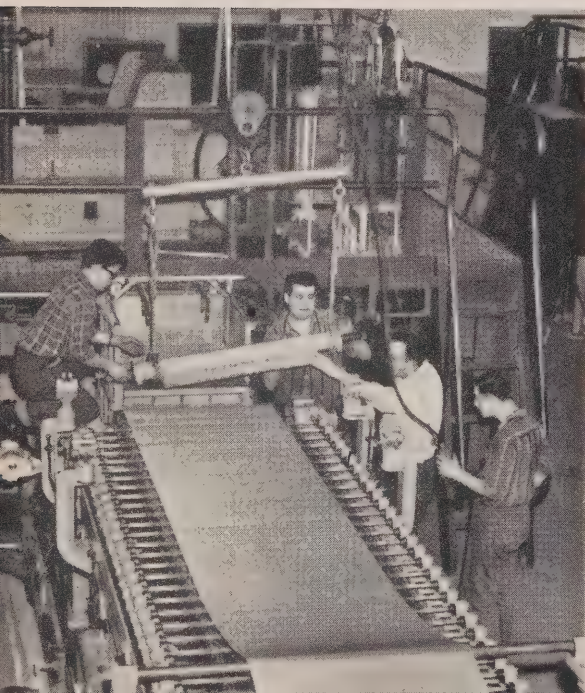
Vocational training of employees is also given by some federal and provincial government departments and agencies for their own needs and for upgrading.

Industry is contributing to vocational training as well. Many of the larger firms have apprenticeship and upgrading programs.

Vocational training must be the most flexible form of education, as it is designed to meet immediate, local needs. There are many illustrations of the adaptation of a program to circumstances and environment.

For example, Nova Scotia started its fishermen's training program in 1946-47. At first, the students were brought to outlying ports by boat,

truck or freight car. This did not work out satisfactorily so after a year's trial they changed to trailer-vans. At present their program of short practical courses is given in three "mobile schools". Each van is fitted out with instruction facilities and living quarters for the instructor. The program is working well and they hope in due time to operate lengthier courses from their headquarters in Pictou.



Learning to change the endless woven wire cloth on which paper is formed is a difficult and delicate job at the paper-making school in Three Rivers, Que.

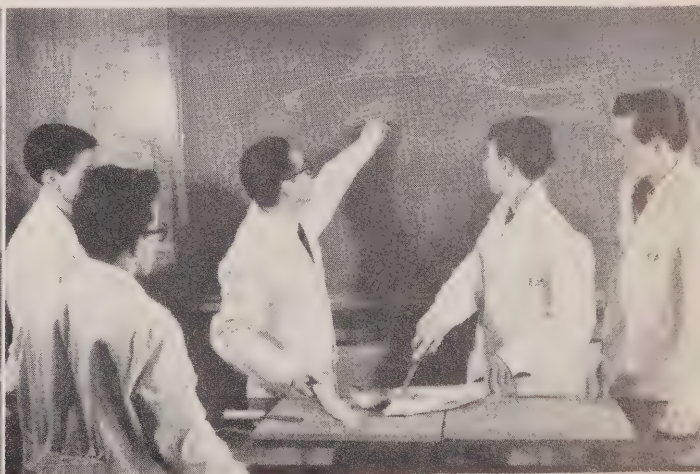
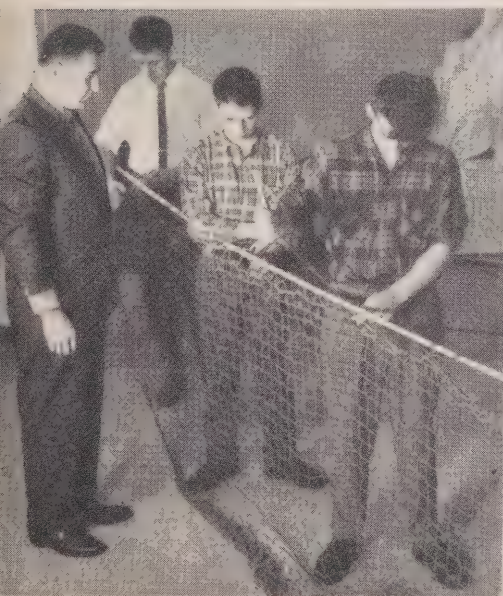
A school with its own silver mine where students can study mining and geology first-hand, the Lake-head College of Arts and Sciences teaches underground surveying in the storied "Silver Mountain" mine, first opened 75 years ago.



The province of Quebec is the main producer of pulp and paper in Canada. To fill the need for technicians in this industry, the province operates the only school in Canada concerned solely with paper-making. The paper-making institute at Three Rivers offers a three-year post-high school course in paper technology where the students are offered well-rounded training in pulp and paper-making, paper chemistry, and instrumentation. Students also benefit from practical experience gained through working on their own "paper-making machine" since the institute operates a complete model paper mill, which is probably the smallest in the world but one of the best equipped.

In the heart of a large mining area, the province of Ontario operates a technical institute for training mining technicians and prospectors. The Provincial Institute of Mining at Haileybury offers a two-year post-high school course in mining technology, in which students are taken through all phases of the mining industry. The use of fine equipment and up-to-date laboratories and the experience gained by field work make the Institute's graduates excellent prospective employees for mining companies.

With the new discovery of oil and gas in western Canada, two institutes are now offering courses for that industry. Ryerson Institute of Technology in Toronto offers a three-year course in gas technology, and the Provincial Institute of Technology and Art in Calgary, in September, 1959, instituted a two-year post-high school course in petroleum technology.



Students at L'École d'Apprentissage en Pêcheries at Grande Rivière, Que., learn the fisherman's trade from net-making to filleting.



Students at Central Technical High School in Toronto take a four-year course in aircraft mechanics.

Keeping abreast of the tremendous growth of the aircraft industry in Canada, three provinces offer courses in that field. In Ontario, the Ryerson Institute has a three-year post-high school course in aeronautical technology and the Central Technical High School in Toronto also offers a four-year course in aircraft mechanics. The province of Alberta at its Provincial Institute in Calgary offers two post-high school courses in the field and two years ago British Columbia opened a two-year post-high school course in aeronautical technology.

Adult Education

Like all other segments of the educational system, adult education has been growing steadily during the last decade. In 1957-58, nearly 105,000 persons enrolled in part-time day or evening credit courses leading to a degree or diploma, nearly 40,000 of them at 32 universities, and the others in publicly-operated educational facilities.

At the same time more than 445,000 Canadians enriched their personal background and improved their qualifications through enrolling in professional, occupational, social and cultural courses. All told during that year, the universities enrolled nearly 130,000 persons and the publicly-operated night schools enrolled nearly 420,000 people, inclusive of the vocational enrolment previously mentioned.

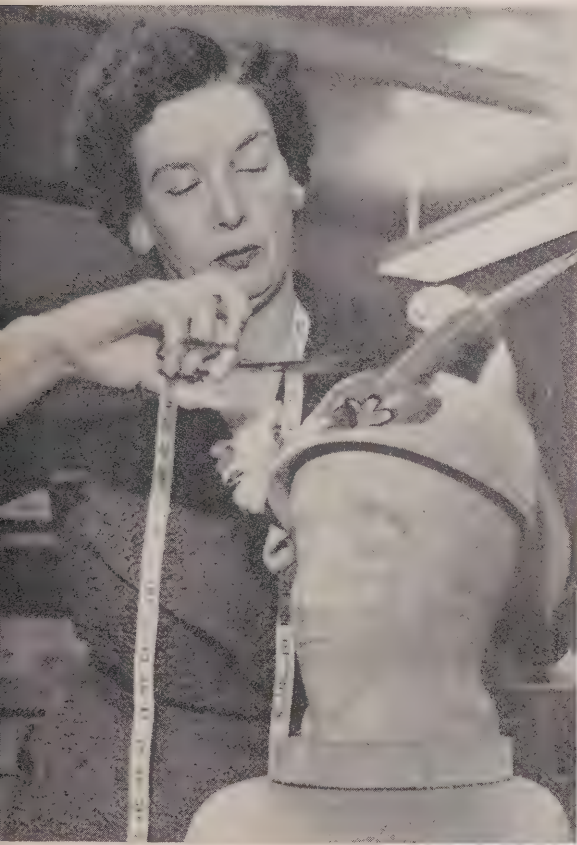
This total of more than half a million includes only those enrolled in specific courses. No reliable figures are yet available for people attending night lectures, forums, study groups, special museum nights or other cultural activities.

A number of organizations conduct classes in art, first aid, handicrafts and so on.

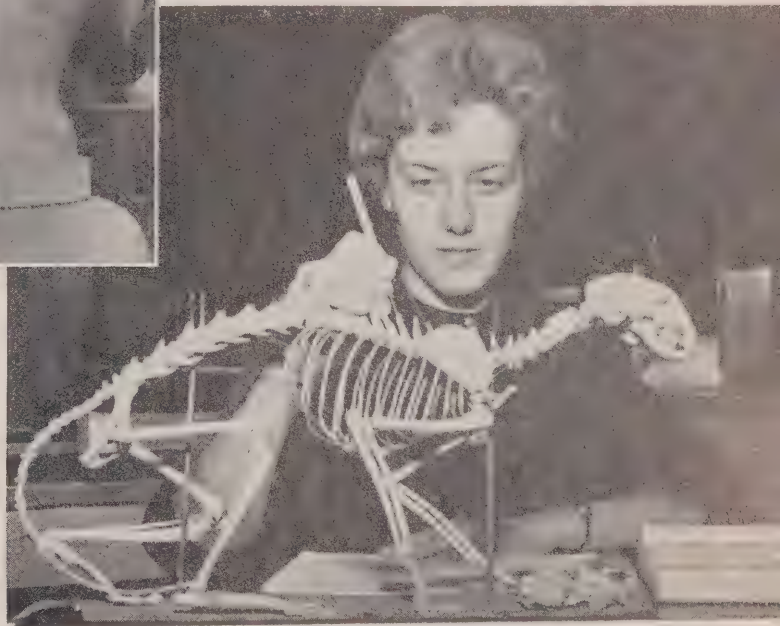
An interesting example of a special program is Frontier College, which sends teachers into remote work camps where they are employed during the day and conduct classes at night.



Students from 40 Montreal and district high schools discuss the significance of radio's influence on youth with representatives of a radio station.



Busy with other work during the day, thousands of Canadians flock to school at night to study almost anything from millinery to archaeology.



Statistics of Canadian Education, School Year 1957-1958

Type of School or Course	Total for Canada		
	Schools	Teachers	Pupils
A. Academic Education			
(a) Provincially-controlled:			
1. Elementary and secondary schools.....	28,416	128,772	3,431,304
2. Evening classes for diplomas.....	—	—	64,858
3. Other evening classes.....	—	—	149,923
4. Correspondence courses.....	—	—	30,582
5. Schools for the blind.....	6	116	584
6. Schools for the deaf.....	9	238	1,757
7. Teacher training schools ¹			
Full year course.....	133	1,020	15,000 [*]
(b) Federally-controlled:			
1. Indian schools.....	485	1,132	33,220
2. National Defence schools (overseas)....	14	245	5,092
3. Northwest Territories.....	52	185	5,026
(c) Privately-controlled academic schools..	1,010	7,414	131,708
B. Vocational Education			
(a) Publicly-controlled:			
1. Institute (post-high school).....	28	500 [*]	7,280
2. High schools.....	² 100	³ 1,000 [*]	⁴ 21,949
3. Trade schools.....	—	—	204,606
4. Part-time day or evening.....	—	—	8,355
5. Correspondence.....	—	—	—
(b) Privately-controlled:			
1. Private business colleges.....	295	1,670	45,317 ⁵
2. Other private vocational schools.....	313	—	35,000 ^{5b}
C. University Education			
1. Full-time university grade.....	339	7,180	86,500 [*]
2. Part-time courses toward a degree.....	—	7,210	39,759
3. Extension, general education, etc.....	—	—	89,828
Total 1957-1958.....	31,200	156,682	4,407,648

* Estimated

¹ Outside of universities.

² An estimated 500 vocational, technical, commercial or composite high schools. They are already included with elementary and secondary schools.

³ Already included with elementary and secondary teachers.

⁴ 91,162 students were enrolled in high school vocational courses.

They are already included with the elementary and secondary pupils.

⁵ Includes full-time, part-time and correspondence students.



Integrated schools serving both Canadian white and Indian children are becoming more common, particularly in the North.



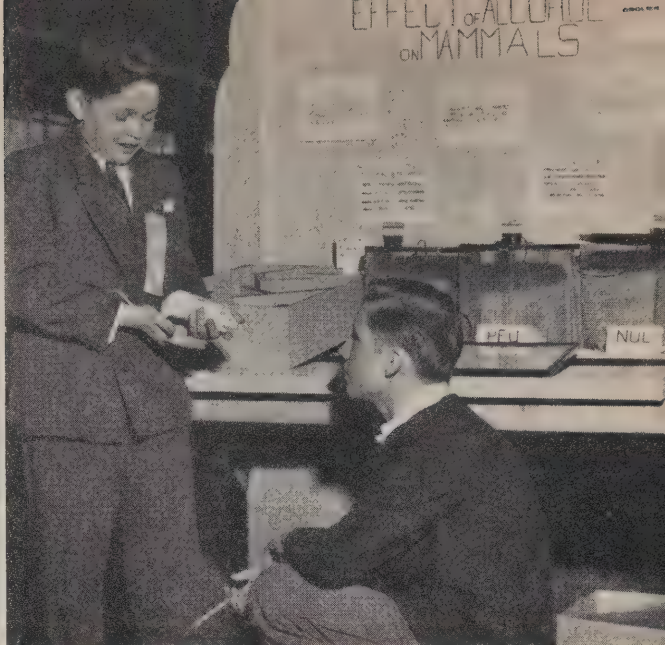
An atmosphere of serene spaciousness characterizes the modern reading room at the Redpath Library, McGill University, Montreal.

Libraries

Public library service of some sort was available to nearly 80 p.c. of the people of Canada in 1958. Total bookstock (12,405,000 volumes) was 0.73 volumes per capita, circulation 2.68 volumes per capita, and expenditure \$0.68 per capita.

Municipal and association public libraries serve all Canadian cities of over 40,000 population, most of those with populations between 10,000 and 39,999 and many smaller centres. Regional public libraries organized in all provinces except Quebec bring library service to smaller communities. In late 1959, Quebec, too, introduced provincial legislation designed to study the public library needs of the province with a view to establishing regional library systems. Provincial library services in nine provinces provide limited facilities for those in sparsely settled areas by mail, bookmobile, boat and plane.

New buildings, increased bookstocks, and a 9.1 p.c. increase in circulation from 1957 to 1958 are indicative of the expansion of Canadian public library services, despite severe staff shortages. The problem of bringing library services to new suburban developments and to rural areas continues to receive attention, and various solutions have been tried. Among these are the extensive use of mobile units, and of rental units, instead of permanent, publicly-owned buildings. In Ottawa, a new branch, the busiest in the



Science fairs, at which school children show exhibits, demonstrations and collections in various branches of pure and applied science, were first held in Toronto, Winnipeg and Vancouver in 1959. So successful were they that a committee representing national professional, scientific, engineering and educational organizations formed the Canadian Science Fairs Council to give advisory assistance on starting and operating local and regional science fairs.

Scientific, engineering and educational organizations formed the Canadian Science Fairs Council to give advisory assistance on starting and operating local and regional science fairs.

city, has been opened in a rental unit in a large shopping centre. A second branch is being designed for a shopping centre in another area of the city, and other Canadian cities have similar plans.

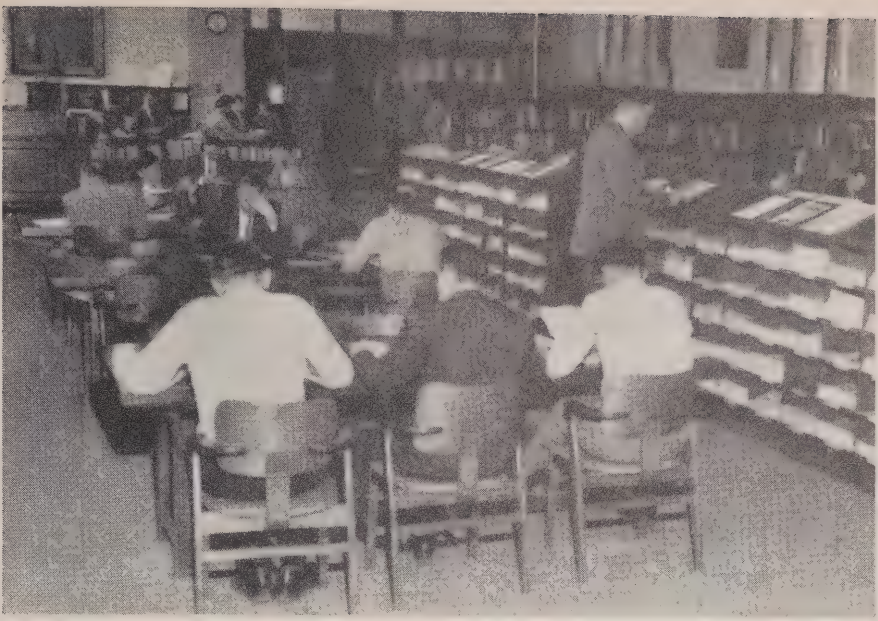
Public library service to the business community is becoming increasingly important. Five large libraries—in London, Ottawa, Toronto, Windsor and Vancouver—now have separate business sections in charge of full-time specialists.

Children 5-14 years of age, although making up only 20 p.c. of the population, continue to be the most frequent visitors to public libraries, and borrow 46 p.c. of the books circulated. Children's librarians also provide story hours, plays and puppet shows, organize clubs and appear on radio and television, to the delight of a receptive clientele.

University libraries, serving an enrolment which increased 9.1 p.c. from 1957-1958 to 1958-1959, are also expanding facilities rapidly, and new and functionally designed university library buildings adorn many a campus.

Special libraries serving government, professional, business and technical organizations assist research workers and administrators to keep abreast of new developments in science and technology.

The Canadian Library Association, a national organization of librarians, library trustees, publishers, and other individuals interested in libraries, acts as a clearing house for library information, publishes a national bibliography, and sponsors Young Canada Book Week, Canadian Library Week, annual conferences and workshops, and numerous other projects.



Special library services for business and industry are available in public libraries of the larger cities.

The National Library

The National Library, in temporary quarters, continues to maintain the National Union Catalogue, and to publish *Canadiana*, a monthly list of books and pamphlets published in or relating to Canada.

The microfilming of catalogue cards of the major libraries in all provinces was completed in 1958, and work continues to keep the National Union Catalogue up-to-date and increase its usefulness. Libraries of all kinds, in Canada and abroad, are making use of the catalogue to locate books in other libraries.

Under the National Library Act, the National Library receives two copies of every book published in Canada. In addition, the Library is building up its collections in other fields.

The story-telling hour in a children's library keeps the young card-holders spell-bound.





Health and Welfare

Health and welfare have received increasing attention in Canada in the post-war years. The rapid urbanization and economic growth of the southern areas of the country and the development of the north have made both necessary and possible the increase of services and the provision of new kinds of programs.

Today's pattern of services is intricate and varied, meeting many though not all needs. Programs must be adapted to problems that vary between provinces and between communities within a province. The pattern also reflects the fact that voluntary services are an integral part of the Canadian tradition and that they support or supplement public services to an extent that again varies across the country. The common denominator is an increasing recognition that both personal and community health and welfare are fundamental factors in any society and that in today's interdependent economy the individual cannot, without widespread community organization of services, meet all the contingencies that threaten his health and well-being.

A considerable amount has been accomplished in meeting primary health and welfare needs. The main causes of dependency—inability to work because of age, disability or unemployment, the loss of the family breadwinner, heavy expense because of illness requiring hospital care—are alleviated to a degree through such programs as old age security and assistance, disability and blindness allowances, unemployment insurance, the provincial programs of mothers' allowances and the residual programs of general assistance. Hospital insurance has become available in the last few years in most of Canada and special prepaid medical programs exist in several provinces. The family is aided by family allowances during the years when its children are young. Progress has been made in building up rehabilitation

services across Canada. The fundamental environmental health and welfare services have been developed to keep pace with the expanding economy.

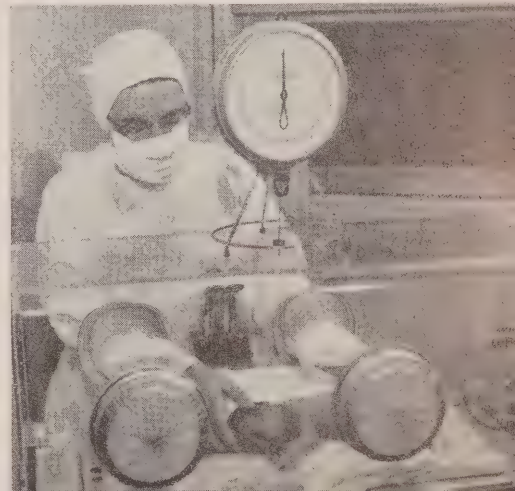
Expansion of services and advances in health knowledge have led to significant improvements in health. For example, the death rate for infants, 30 per thousand live births, is less than half that of 20 years ago and infectious diseases, including tuberculosis, now account for less than 2 p.c. of all deaths. However, death rates from lung cancer and heart disease, particularly among males, continue to increase; accidents, particularly automobile accidents involving young persons, take their steadily growing tragic toll. In environmental health work, air and water pollution problems urgently wait solution, as do other problems of industrialization.

In welfare, too, much has been accomplished. Services are better and more extensive than ever before. Public welfare services have been improved and expanded and, with the assumption of a large portion of the costs by higher levels of government, standards of aid and administration have been raised.

The expansion of government services has been paralleled by an equally significant development in the voluntary field. Relieved of much of the financial burden of providing maintenance, voluntary agencies have been in a better position to develop other types of essential community service, both those that are broadly preventive and those designed to aid people in dealing with problems of adjustment and relationship in time of individual or family crisis. Services have been expanded and improved in family welfare and child welfare, including specialized institutional care of children, social work in hospitals and clinics, programs for the aged, correctional care, rehabilitation and recreation. Community chests and united appeals in some 107 areas unite the financial campaigns of welfare, health and recreation agencies, and welfare or social planning councils are promoting the development, co-ordination and use of community resources in more than 45 Canadian cities and regions. The Canadian Welfare Council, a national association of public and private agencies, provides a means of co-operative planning and action across the country and serves as a link between voluntary agencies and between the public and voluntary fields. In Ontario, similar functions in relation to provincial matters are performed by the Ontario Welfare Council.

However, shortages of qualified staff remain, and social problems, such as seasonal unemployment and lack of low rental housing, continue to give cause for concern.

Special attention has been focussed, in recent years, on the care of premature infants. While the incidence of prematurity has remained little changed, there has been a marked improvement in the number of infants who have survived as a result of specialized attention.



Health Services

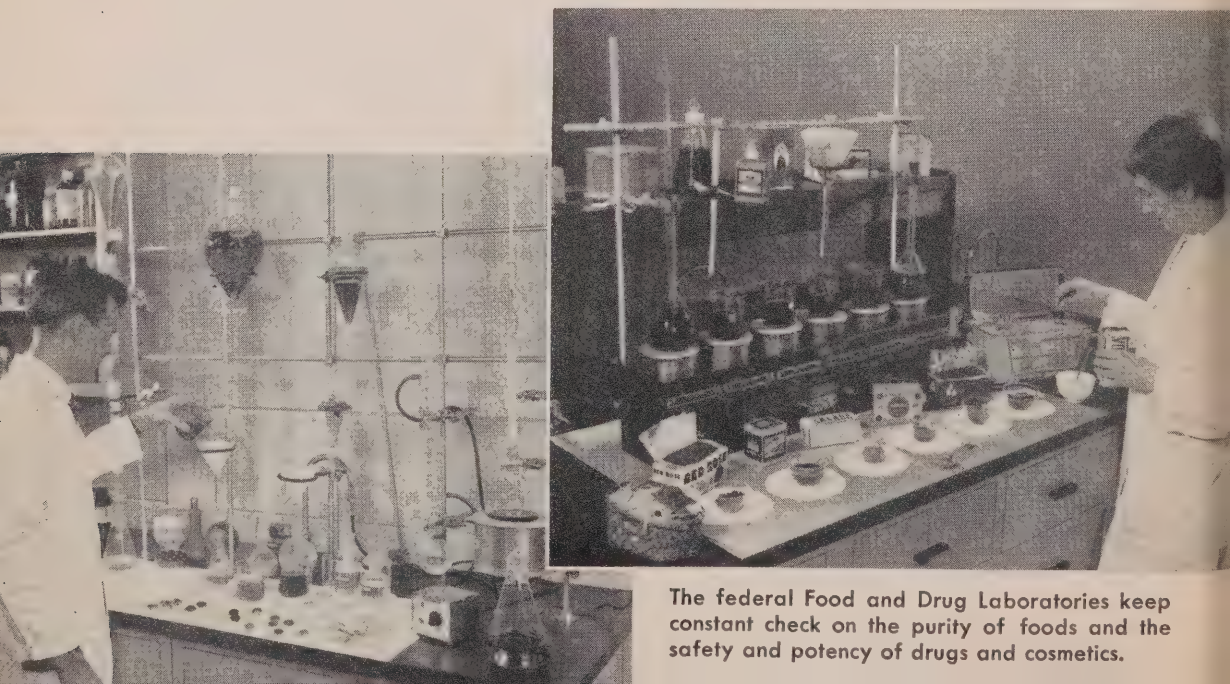
Responsibility for health in Canada is shared by the health professions, the hospitals, public health and welfare and other departments, voluntary agencies, research foundations and the community itself which supports the services developed to serve it. Each plays its own distinct and vital role in the intricate pattern of services that has developed through the years.

The Federal Government has certain statutory and other obligations. The food and drug administration reaches into all areas of the country to provide an essential health safeguard. The operation of quarantine and immigrant health services is a federal responsibility. The Federal Government provides comprehensive health and hospital services designed to bring the health level of the Indian, especially the northern Indian, and the Eskimo, up to that of his white fellow citizen and provides a complete range of health services to veterans suffering from service-connected disability and to members of the armed forces.

One of its major roles has become the provision of financial aid and co-ordinating services to the provinces. Under the National Health Grant Program, introduced in 1948, grants totalling more than \$50,000,000 annually are now available to the provinces for the development of health and hospital services.

The federal Hospital Insurance and Diagnostic Services Act of 1957, under which provinces administering hospital insurance plans receive federal reimbursement for approximately half of costs shareable under the program, marked a new era in the field of hospital care. By the end of 1959, nine provinces had hospital insurance schemes in operation.

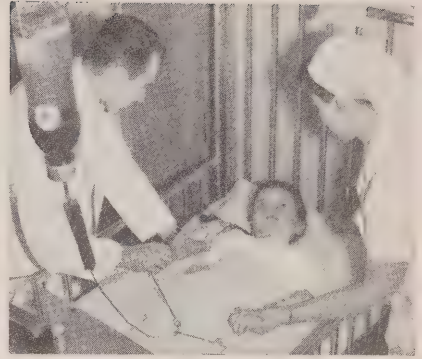
The Hospital Insurance and Diagnostic Services Act contains provisions designed to achieve high standards of care, and specifies a comprehensive range of benefits that must be provided, including standard ward accommodation and meals, nursing service, drugs and biologicals for in-patients, surgical supplies, use of operating and case room, x-ray and laboratory procedures and the medical interpretation of diagnostic procedures, and the use of radiotherapy and physiotherapy facilities where available. All the



The federal Food and Drug Laboratories keep constant check on the purity of foods and the safety and potency of drugs and cosmetics.



Many indispensable health services are provided by voluntary agencies, such as home nursing by the Victorian Order of Nurses and the maintenance of a blood bank by the Canadian Red Cross Society.



provincial plans provide these services for in-patients; insured services for out-patients is a matter for provincial discretion. Tuberculosis and mental hospitals are excluded from the federal-provincial plan as well as institutions or nursing homes providing custodial care, though Ontario and Prince Edward Island include mental and tuberculosis hospital care in the provincial plan and most provinces provide mental and tuberculosis hospitalization substantially free of charge. The provinces have wide latitude as to how their programs are to be administered and financed. General revenues, provincial sales tax and premiums are utilized in different provinces. Services must be available to all residents; participation is for the most part compulsory. In some provinces a commission has been set up to administer hospital insurance services.

Provincial public health programs are administered through provincial and local health departments and by health units serving counties or groups of municipalities. Most provinces operate laboratories and provide preventive and treatment programs for venereal disease, tuberculosis, mental illness, cancer and other conditions.

The larger municipalities provide a range of basic health services including sanitation, communicable disease control, child, maternal and school health services, public health nursing, health education and vital statistics. They participate in the costs of care and supply medical services to indigents. Services are often administered through local health units or districts.

Voluntary agencies engage in educational work, in the provision of preventive, treatment and rehabilitation services, and in collection of the necessary funds. Those operating on a national basis are generally organized into provincial divisions with headquarters in the capital city of the province. National agencies include the Canadian Public Health Association, the Canadian National Institute for the Blind, the Canadian Tuberculosis Association, the Canadian Arthritis and Rheumatism Society, the National Cancer Institute, the Canadian Mental Health Association, the Canadian Paraplegic Association, the Multiple Sclerosis Society of Canada, the National Heart Foundation, the Canadian Council for Crippled Children and the Canadian Hearing Society. The Canadian Red Cross Society is actively

concerned in a number of aspects of health work and operates a blood transfusion service. The Victorian Order of Nurses and the St. John Ambulance Association provide nursing and emergency services.

Hospitals. Although the difference between the number of hospitals in 1957 (1,305) and 1958 (1,301) was insignificant, additions to hospitals in both years resulted in a 3.5 p.c. increase in over-all rated bed capacity. The 194,688 beds, cribs, and bassinets available in Canadian hospitals in 1958 accommodated an average daily population of 170,751 persons, or 2.5 p.c. more than one year earlier. Thus, the average daily occupancy rate was 87.7 per cent during the year.

Hospitals have been classified in two ways: (1) according to the type of service provided—i.e., general and allied special hospitals, mental hospitals, and tuberculosis sanatoria; and (2) according to the type of ownership—i.e., public hospitals under provincial, municipal, lay, and religious ownership, private hospitals, and federal hospitals operated for those persons whose hospital care is the special responsibility of the central government.

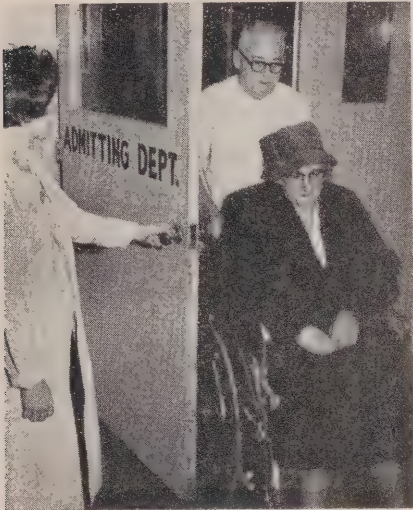
Public general and allied hospitals—as a group, more numerous than hospitals of the other types—accounted for 93 out of every 100 hospital admissions of adults, children, and newborn infants. They provided an in-patient bed, at some time during 1958, to one out of every 209 residents, and an average of 9.4 days of treatment and care for every patient. They reported net expenditures in 1958 of \$570,900,000, or \$54,684 per hospital. Of the total expenditures, general and allied special hospitals spent 77.8 p.c., mental hospitals 16.9 p.c., and tuberculosis sanatoria 5.3 p.c. Cost per patient-day was highest in general and allied special hospitals (\$15.71), lowest in mental institutions (\$4.08).

Statistics of Reporting Hospitals, classified by Type of Hospital and Type of Service, 1958

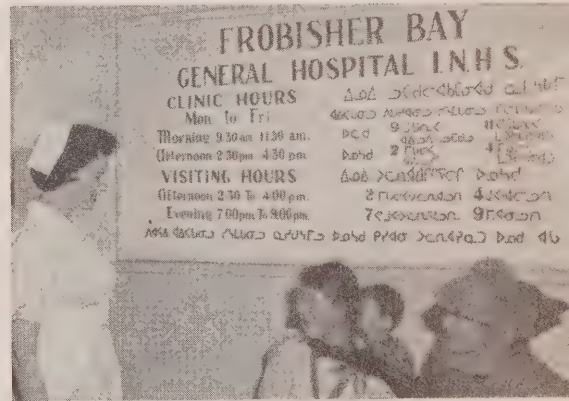
Item	General and Allied	Mental	Tuberculosis	Total
Public—				
Hospitals reporting.....No.	922	71	51	1,044
Bed capacity ¹"	107,514	57,032	12,031	176,577
Average daily population ² .."	81,709	65,596	9,351	156,657
Admissions....."	2,811,125	27,238	15,940	2,854,303
Hospitals reporting.....No.	852	70	51	973
Expenditure.....\$'000	444,161	96,327	30,410	570,898
Cost per patient-day.....\$	15.71	4.08	9.22	10.35
Private—				
Hospitals reporting.....No.	205	5	—	210
Bed capacity ¹"	5,189	393	—	5,582
Average daily population ² .."	4,161	334	—	4,495
Admissions....."	75,764	2,601	—	78,365
Federal—				
Hospitals reporting.....No.	42	—	5	47
Bed capacity ¹"	11,542	—	987	12,529
Average daily population ² .."	8,782	—	815	9,598
Admissions....."	75,223	—	982	76,205

¹ Includes cribs and bassinets.

² Based on the patient-days of adults, children and newborn.



A 3 p.c. increase in bed capacity was achieved in 1959 through extensions to existing hospitals, like the Ottawa Civic, or the building of new ones, like the Winnipeg Children's Hospital, the Canadian Forces Hospital in Kingston or the Frobisher Bay Hospital. More patients were admitted, more babies born, more operations performed. As hospital insurance was put into effect by one province after another, the burden of expense lightened for the patients.





At the Provincial Geriatric and Rehabilitation Centre in Regina, patients enjoy walks in the sun, tea in the solarium.

Rehabilitation Services

In all provinces services to assist disabled persons to become physically, socially and economically independent are steadily expanding. A number of organizations, many voluntary, provide services for various classes of the handicapped, including crippled children and those suffering from arthritis and rheumatism, poliomyelitis, paraplegia, cerebral palsy, multiple sclerosis, alcoholism, mental illness and mental defect. Combined voluntary and government rehabilitation funds have supported their services.

Co-ordinating bodies have been formed at community, provincial and federal levels. The federal Department of Labour provides two matching grants to the provinces; one supports the efforts carried out by the provincial co-ordinator, the second is specifically designed for vocational training under Schedule "R" of the Vocational Training Agreement. Close co-operation with the National Employment Service provides for placement of the disabled in suitable jobs. During 1958-59 more than 1,200 persons were enrolled in training courses and nearly 15,000 handicapped persons placed in jobs. The Department of National Health and Welfare, under the National Health Grants Program, provides grants to the provinces for medical rehabilitation services for disabled persons. The Department of Veterans Affairs, a pioneer in this field, provides special treatment and rehabilitation services to veterans.

Through the co-operation of voluntary and provincial government co-ordination agencies, the disabled, who have no resources to meet all or part of rehabilitation costs, may be assisted with medical assessment and treatment, prosthetic appliances, out-patient physical, speech and occupational therapy, rehabilitation equipment such as wheel-chairs, transportation, and vocational training. Rehabilitation services in general hospitals are expanding and separate medical rehabilitation centres have been established in most provinces. Four of these centres are operated by provincial Workmen's Compensation Boards which have experimented in methods of physical and vocational rehabilitation. All provinces make some provision for the education of handicapped children such as the blind, the deaf, the mentally retarded, and the physically handicapped in general, either through the operation of special schools or by financial grants.

Income Security

All levels of government are concerned with maintaining income levels of persons who become or are liable to become dependent on the community. In addition, family allowances are designed to provide a special measure of aid to families with young children. Family allowances, old age security and unemployment insurance are administered by the Federal Government. Other major programs are the administrative responsibility of the provinces, in some cases with federal assistance.

Family Allowances. Children under 16 years of age who have been resident in Canada for one year are eligible for family allowances paid by the Federal Government from general revenue. They involve no means test and are not considered as income for tax purposes. Allowances are paid at the monthly rate of \$6 for children under 10 years and \$8 for children 10 to 16 years of age. An allowance of \$60 a year is paid on a quarterly basis for each child under 16 years of age supported by an immigrant who has landed for permanent residence in Canada or by a Canadian returning to Canada to reside permanently. This allowance is paid for a period of one year, until the child is eligible for family allowances.

Old Age Security. A pension of \$55 a month is paid by the Federal Government to all persons aged 70 or over who have been resident in Canada at least ten years. It is financed through a 3-p.c. sales tax, a 3-p.c. tax on net corporation income and, subject to a maximum limit of \$90 a year, a 3-p.c. tax on individual net taxable incomes.

The provinces of Alberta, British Columbia and Saskatchewan make supplementary payments to recipients of old age security who qualify under a means and residence test. In Ontario and Manitoba supplementary payments may be made by a municipality under special legislation. In the remaining provinces and territories, recipients of the pension are eligible for public assistance on the same basis as other persons.

This young woman is gradually losing her sight, but continues in useful employment as the operator of a braille-equipped sub-switchboard.



Unemployment Insurance. The Unemployment Insurance Act provides for a co-ordinated program of unemployment insurance and for an employment service, through offices of the Unemployment Insurance Commission across Canada. In general, all employed persons, with certain excluded occupations such as agriculture (with minor exceptions), domestic services and school teaching, are insured irrespective of length of residence, if their annual earnings do not exceed \$5,460. Additional information giving rates of contribution and benefit as well as the operations of the service are given on pp. 158-9.

Old Age Assistance, Disabled and Blind Persons Allowances. Assistance or allowances of up to \$55 a month are paid under the Old Age Assistance Act to needy persons who are aged 65 to 69 years; under the Disabled Persons Act to those 18 years of age or over who are totally and permanently disabled; and under the Blind Persons Act to blind persons aged 18 or over. In each case there is a residence requirement of ten years, and the allowance is subject to a means test.



Medical research continues unrelentingly and new services are evolved. Five provinces have free diagnostic cancer clinics; two provide free treatment, including surgery.



◁ A small heart patient is x-rayed.

For old age assistance and disability allowances, total annual income may not exceed \$960 for a single person, \$1,620 for a married couple and \$1,980 for a married couple, one of whom is blind. For blindness allowances it may not exceed \$1,200 for a single blind person, \$1,680 for an unmarried blind person caring for a dependent child, \$1,980 for a married couple when one is blind and \$2,100 for a married couple when both are blind.

Programs are administered by the province; the Federal Government reimburses the province for half old age assistance and disability allowances and for three-quarters of blindness allowances.



Eskimos, whose welfare is the responsibility of the Federal Government, are taught home and trade skills.

The provinces of Alberta, British Columbia and Saskatchewan make supplementary payments, subject to an income and residence test, to recipients of blindness allowances, Alberta and British Columbia to recipients of old age assistance, and British Columbia to recipients of disability allowances. Under special provisions of assistance legislation in Ontario and Manitoba, supplementary payments may be made by municipalities to recipients under all programs. In the other provinces and territories recipients are eligible for public assistance in the ordinary way.

Mothers' Allowances. Allowances to certain needy mothers with dependent children are provided by all provinces. Assistance is granted to widows, mothers with husbands in mental hospitals, mothers who are deserted and, in nine provinces, mothers whose husbands are disabled. Some provinces provide also for mothers with husbands in penal institutions and for divorced, separated and unmarried mothers. To be eligible, an applicant must be caring for one or more children of eligible age, and must meet specified conditions of character or competence, need, residence and, in three provinces, of nationality. The maximum monthly allowances payable vary considerably by province.

General Assistance. Aid is provided in all provinces to persons in need who cannot qualify under programs designed for specific groups. Assistance is normally determined by the local authority and is given on the basis of a means test and, usually also, a residence requirement. In general the municipalities administer the program, with provincial governments assuming responsibility in unorganized territory. In Newfoundland, however, the provincial government administers all forms of assistance through district officers. In Quebec, assistance has traditionally been given by religious and other voluntary organizations with the province and municipality providing most of the financial aid; some municipalities are now administering general assistance programs. In Alberta, under the Widows' Pensions Act, pensions of up to \$55 a month may be paid, subject to certain conditions of need and residence, to widows aged 60 to 64 and to wives in this age group whose husbands are committed to mental hospitals or who have deserted them.

Most provinces provide for reimbursement to municipalities for relief expenditures. Under the terms of the Unemployment Assistance Act, the Federal Government shares with the provinces and their municipalities 50 p.c. of the cost of assistance payments to unemployed persons. Immigrants in their first year in Canada may receive aid through the local authority under an agreement made with the province whereby costs are shared by the provincial and federal governments, or they may be referred directly to the local office of the Department of Citizenship and Immigration.



Volunteers visit mental hospitals, like this one in Ponoka, Alta., to provide normal social intercourse; in many centres, clubs for discharged patients help them to adjust back to independence.

Other Welfare Services

Provincial and municipal government departments, in addition to administering certain of the income maintenance programs already described, offer a number of other services to the community. There are wide differences in the degree to which services have been developed. In some centres they include child welfare and old age services, public housing, post-sanatorium rehabilitation programs, nursery and day care programs, recreation, family and juvenile courts and other correctional services, and the maintenance, supervision and licensing of welfare institutions.

An important role in meeting the needs of families is also played by voluntary family service agencies, of which there are some 96 in the principal centres throughout the country. These agencies, which sometimes combine certain child welfare services with their family programs, were among the pioneer welfare agencies of Canada but, whereas their principal function for many years was the provision of material aid, emphasis today is largely on casework and counselling, though groupwork techniques are now being introduced.

In addition to family agencies, more specialized organizations are available in some centres to meet particular needs. Services such as homemaker services, recreation, day care centres, services for special groups such as the aged, immigrants, youth groups, and former prisoners, are also provided by voluntary agencies with co-ordination of services in the larger centres a function of the local welfare council. Ethnic and religious groups also provide many services to special groups.

Voluntary agencies are financed by public contributions, usually through a united fund, or community chest, and some may also be assisted by grants from municipal, provincial or federal governments.

Child Welfare and Protection. Services for children, especially those suffering from parental neglect or deprived of normal home life, were among Canada's earliest welfare programs. Child welfare agencies, in most Canadian communities, increasingly emphasize casework designed to strengthen the family's capacity to care for its children. Where placement is essential, children may be made wards of child welfare agencies either temporarily pending the improvement of home conditions, or permanently where a return to the home is not envisaged. Action to transfer the guardianship of children from a parent to an agency is, in general, taken only on court authority.

The unmarried mother is assisted in the social and legal problems involved in her difficulty. When the decision is to place the child, adoption is the plan normally made. More than 12,000 adoptions are completed in Canada annually.

Children in the care of agencies and not placed for adoption are usually cared for in foster homes, though specialized institutions care for children having emotional disturbances or problems which cannot be met adequately in the normal foster home. Rapid expansion is occurring in community services for retarded children and many centres have classes and schools for them.

Child welfare services are provided under provincial legislation and all provinces have some central authority. Except in Quebec, the program may be administered by the provincial authority itself or may be delegated to local children's aid societies, which are voluntary agencies with local boards of directors supervised and assisted financially by the province. Services are operated provincially in Saskatchewan, Prince Edward Island, Newfoundland, and to a large extent in Alberta, where there is also some delegation of authority to the municipalities. In Ontario and New Brunswick, services are administered by a network of children's aid societies covering the entire province; in British Columbia, Manitoba and Nova Scotia, children's aid societies serve some areas with the province providing direct services elsewhere. In Quebec, child welfare services are provided by agencies and institutions under private, and largely religious, auspices with provincial grants toward child maintenance being administered by the Department of Social Welfare.



Prenatal classes, generally sponsored by provincial health departments, enjoy increasing popularity. Here a group of expectant mothers, referred to the class by their own physicians, learns the art of relaxation.



The Good Companions Day Centre for Senior Citizens in Ottawa is unique in two respects: it occupies a building built especially for its needs, and it is open six days a week from 9 a.m. to 9 p.m., during which time it serves two meals. The Good Companions learn skills, including square-dancing, do some social service, publish a bulletin and "socialize". Some have put a permanent end to their loneliness through marriage.

Services for the Aged. A variety of welfare services is offered in many communities to older persons under public or voluntary auspices. These include informational, counselling and referral services, friendly visiting, housing registries and homemaker services. Voluntary services are provided in several cities by family agencies and in a few by agencies organized specially to serve older persons. A large number of clubs and some centres have been established to provide recreational and social activities, ranging from games and group singing to extensive handicraft programs and lectures.

In recent years a number of specially designed low-rental housing projects have been built for older persons, particularly in Ontario and the four western provinces. Generally these have been financed by a combination of federal low-interest loans, provincial grants and municipal and voluntary contributions. Welfare institutions are maintained to care for many older people who do not require hospital care, operated mainly either by municipal governments or by voluntary and religious organizations, generally with some form of public aid. An effort is made in some provinces to place well older persons in small proprietary boarding homes. The aged who are chronically ill are cared for in chronic and convalescent hospitals, private or public nursing homes and in homes for the aged and infirm.

Correctional Services. The responsibility for Canada's adult correctional services is shared by the federal and provincial governments. Parole and the institutions that care for prisoners who receive a sentence of two years or more are a federal responsibility. Probation and the institutions for short-term prisoners are provincial. Voluntary welfare agencies do much of the parole supervision, and provide after-care service. The juvenile services are provincial with some of the responsibility passed down to the municipality and shared by voluntary welfare agencies in some provinces.

Veterans Affairs

Canada's war veterans are still eligible for pensions, medical treatment, land settlement and home construction assistance, war veterans allowances, veterans' insurance and various welfare services, including advanced education assistance for the children of the war dead. The administration of these benefits is the responsibility of the Department of Veterans Affairs, except as to disability and dependent pensions which are the responsibility of the Canadian Pension Commission.

The estimated cost of these benefits, including their administration but not loans, was approximately \$291,500,000 for the 1959-60 fiscal year, of which slightly over half was for disability and dependent pensions.

During the 1959 Session of Parliament the Veterans' Land Act was amended, the major changes being an increase in the maximum additional loan to full-time farmers from \$9,000 to \$20,000 and to small holders from \$7,400 to \$9,000, and an increase in the maximum assistance for home construction on small lots from \$8,000 to \$10,000.

As at the end of December 1959, there were 54,550 active VLA accounts in effect, 30,700 veterans had earned their conditional grants, and 18,700 settlers had received title to their properties.

The number of war veterans allowance recipients continued to grow—up 3,400 from 64,100 to 67,500 as at December 31, 1959—and it is expected that this trend will continue for several years. The expenditure for these allowances during the calendar year 1959 was approximately \$56,900,000.

The Department continues to operate 11 active treatment hospitals, two convalescent centres and two domiciliary care homes with a total rated capacity of 8,955 beds as at December 31, 1959. All of these institutions in the participating provinces have been approved for the provision of insured services under the Hospital Insurance and Diagnostic Services Act.

Construction continued, during 1959, on a new wing at Shaughnessy Hospital, Vancouver, to replace obsolete accommodation, and plans were made for construction to begin in 1960 on a similar wing at Westminster Hospital, London, Ontario. Planning was also started for the construction of a pavilion in St. John's, Newfoundland.

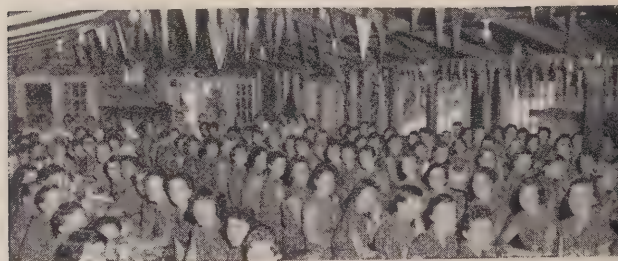
The reopening of the Veterans Insurance Act to all who were ever eligible, providing they do not already have the maximum protection, has resulted in many new policies being written. By the end of 1959, only \$16,408,000 in re-establishment credit remained unclaimed out of the original total of \$386,000,000. As at the same date, 1,738 children had received assistance under the Children of the War Dead (Education Assistance) Act.



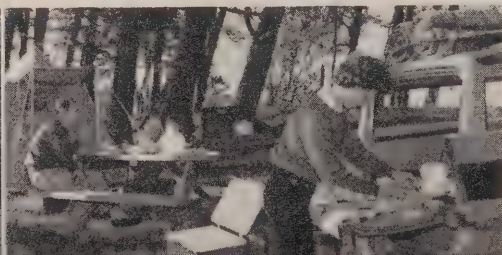
Soldiers today—veterans tomorrow. As of April 30, 1960, there were 119,845 officers and men in the regular army, navy and air force, and 47,075 in reserve units.



From Robert Paul and Barbara Wagner, four times World Pairs Figure Skating Champions and the first pair ever to receive a perfect score in Olympic competition, and Anne Heggtveit, Olympic Slalom Champion, to the Little Leaguer on the corner lot, Canadians love sports in all the variety made possible by extremes of climate and geography.



Camping, whether in large groups, small special camps or family units, is popular from coast to coast.



Housing

Construction of housing, now a major national industry, has grown spectacularly alongside the over-all economic and industrial development of Canada during the last 15 years. In 1959, approximately 5 p.c. of Canada's total national output was directed to housing and 21 p.c. of all fixed capital was invested in housing. In recent years house building has been second only to utilities in total amount of capital investment. In addition, the housing industry has a marked effect on many other spheres of economic activity, including the building of roads and schools associated with new housing and the labour devoted to producing new consumer durables and furnishings required for the new houses.

It is believed that Canada must maintain, on average, a basic output of 125,000 new housing units a year to meet the needs created by family formation, immigration, establishment of non-family households, replacement of dwellings that are lost or demolished each year, and the flow of people from rural to urban centres. For the last five years Canada has been more than meeting this basic output, erecting an average of 143,000 units annually. In spite of the decline in housing activity from 1958 to 1959—from 164,632 starts to 141,345—the year 1959 had a high level of housing construction, the second highest on record.

House building in Canada is, for the most part, privately initiated. Rarely, during the last 10 years, have publicly initiated starts represented more than 2 p.c. of the total output. On the other hand, while publicly initiated housing is small in proportion, a large amount of privately initiated

Some of Canada's 4,000,000 homes in a typical suburban development. More than 80 p.c. of the houses financed under NHA in 1959 were three-bedroom bungalows; 18 p.c. were split-level. The average lot cost \$2,533 and the average cost of a house, \$14,000 to \$16,000.





In the bigger centres, luxury apartment buildings are springing up in downtown areas, luxury homes in the suburbs.

housing has received public assistance under the terms of the National Housing Act.

Of the 1,500,000 houses built since the end of the war, roughly one-third has received Federal Government assistance in one form or another. Federal aid, at least since 1954, has mainly taken the form of insurance, when certain approved lenders make mortgage loans which are insured against loss by Central Mortgage and Housing Corporation, the federal housing agency. In addition, the Corporation itself may make loans to prospective homeowners unable to obtain mortgage loans from approved lenders, and to private companies wishing to construct low rental housing. Direct loans by the Corporation have only been substantial during the last 2½ years.

Of the 141,345 housing starts made in 1959, more than half received government assistance. Central Mortgage and Housing Corporation financed 32,228 starts with direct loans and the approved lenders made insured loans for 25,082 units. Conventional mortgages made by institutional lenders accounted for 45,200 starts and the remainder were financed by mortgage loans from individuals and other non-institutional lenders, or without recourse to mortgage loans at all.

Corporation lending included loans to finance construction of 4,518 low rental dwellings in areas in which conditions of shortage, overcrowding or substandard housing existed. Some 900 of the units approved in 1959 were designed specifically for elderly persons and were sponsored by non-profit organizations.

Another form of assistance to low income families under the National Housing Act is provision for the construction of housing projects by the Federal Government in partnership with the government of a province.

During 1959 approval was given for nine public housing projects to provide a total of 772 low rental dwellings in developments ranging in size from 12 to 298 units. These projects were located at Brantford, Clinton, Delhi, Kingston, Orillia, Ottawa, Sarnia and Windsor in Ontario, and Regina in Saskatchewan.

Over the years Canadian cities have become increasingly aware of the need for urban redevelopment and in 1959, under the National Housing Act, federal grants were approved for three cities, Halifax, Toronto and Windsor, toward the cost of redevelopment of blighted areas, and to assist 10 municipalities to undertake urban renewal studies.

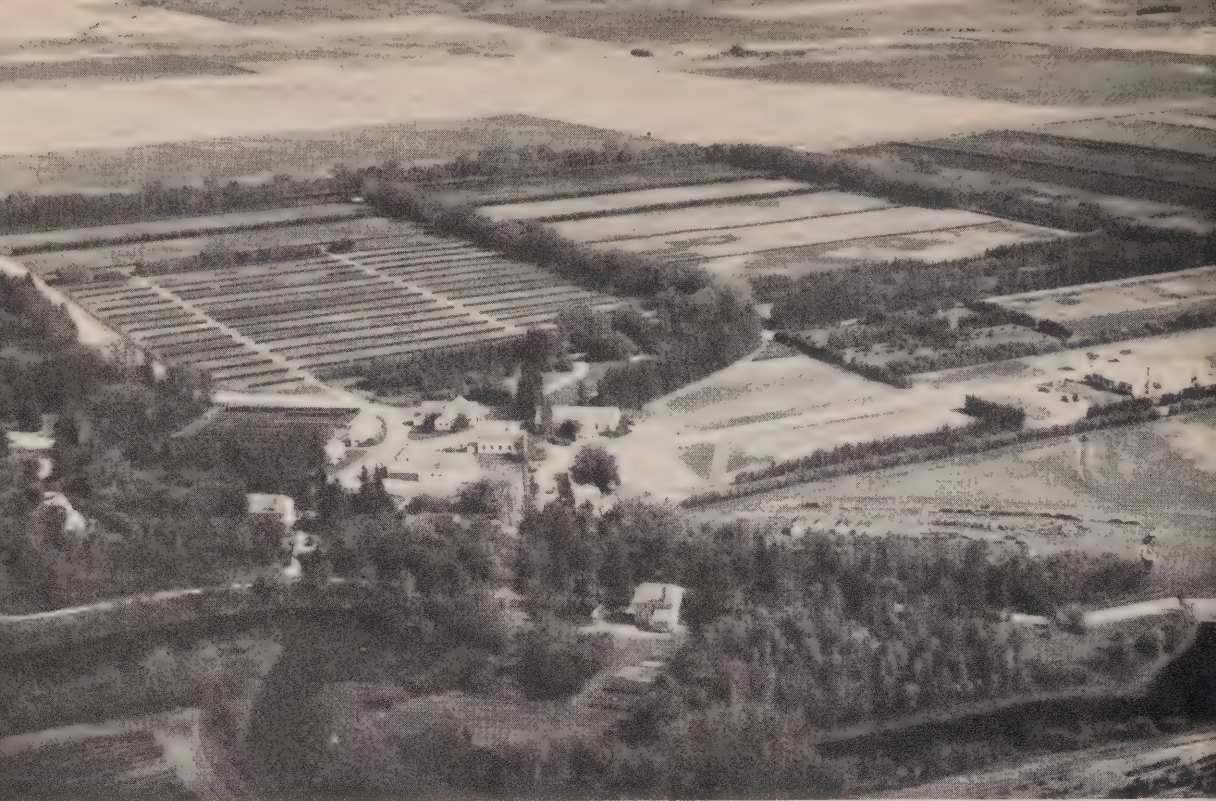
There was also a continued awareness of the need for community planning and housing research. Central Mortgage and Housing Corporation made \$1,100,000 available for these activities, of which more than one-third was spent outside the Corporation. Grants were provided to universities for fellowships and bursaries for housing research. The Corporation also continued financial assistance to the Community Planning Association of Canada, a voluntary society incorporated to promote nation-wide recognition of the importance of orderly community and regional development.

A federal grant of \$30,000 was made to the Royal Architectural Institute of Canada, which established a committee to study the design of residential areas.



The growth of suburbia has created the need for costly thoroughways and overhead roads to carry people to and from their daily work. These are in Vancouver and Montreal.





Visitors are welcome at Canadian government experimental farms. This one at Indian Head, Sask., is like a beautiful design on a huge carpet of grain fields.

Travel in Canada

Canada, the world's second largest country, has more than half the world's fresh water. The lake-dotted woodlands of almost every province have big and small game, wildfowl and game fish, while five provinces can provide saltwater fishing. Visitors to Canada usually visit the cities, but Canadians have a great love for the countryside and are fortunate to live in a land where they can reach open country quite close to their permanent homes. The summer cottage—owned or rented—is, perhaps, most widely used for vacations, particularly for families with small children, and overnight, weekend or holiday camping is becoming more commonplace every year. There must be few Canadians who are not familiar with the gentle music of water lapping on a beach and wind whispering through woods or, perhaps, rain dropping on canvas! Canada has scenery to satisfy every preference, from salt surf to wooded pool, from desert to jagged mountain peak, from shimmering beach to blunt brown hill.

In every province, some of the most spectacularly beautiful scenic tracts have been designated as National Parks by the Federal Government. They are equipped with the facilities and services that make them ideal playgrounds in every season of the year for people of every taste. Swimmers have their choice of hot mineral springs in the mountain parks, clear freshwater lakes in the prairie and eastern parks, and salt water in the provinces bordering the Atlantic. Dressing-room facilities are provided, as well as life guards at the main beaches. Some parks have heated outdoor pools.

There are 750 miles of good motor roads in the National Parks and 2,500 miles of well-kept hiking trails. Most of the parks have excellent golf courses, tennis courts, bowling greens, children's playgrounds and other facilities

and many of them preserve forts, battlefields and other historic sites. In three of the National Parks in British Columbia and Alberta, winter sports have been developed on a large scale. Colourful winter carnivals and many championship ski-meets are held.

National park names and areas are as follows:—

<u>Park</u>	<u>Area</u>	<u>Park</u>	<u>Area</u>
	sq. miles		acres
SCENIC, RECREATIONAL AND ANIMAL		HISTORIC	
Wood Buffalo, Alta. and N.W.T.	17,300.0	Fortress of Louisbourg, N.S.	339.5
Jasper, Alta.	4,200.0	Signal Hill, Nfld.	243.4
Banff, Alta.	2,564.0	Fort Lennox, Que.	210.0
Prince Albert, Sask.	1,496.0	Fort Beausejour, N.B.	81.3
Riding Mountain, Man.	1,148.0	Fort Prince of Wales, Man.	50.0
Kootenay, B.C.	543.0	Halifax Citadel, N.S.	36.9
Glacier, B.C.	521.0	Fort Battleford, Sask.	36.7
Yoho, B.C.	507.0	Fort Anne, N.S.	31.0
Cape Breton Highlands, N.S.	367.2	Port Royal, N.S.	20.5
Waterton Lakes, Alta.	203.0	Grand Pré, N.S.	14.0
Terra Nova, Nfld.	156.0	Alexander Graham Bell Museum, Baddeck, N.S.	14.0
Mount Revelstoke, B.C.	100.0	Lower Fort Garry, Man.	13.0
Fundy, N.B.	79.5	Woodside, Ont.	12.0
Elk Island, Alta.	75.0	Fort Langley, B.C.	9.0
Prince Edward Island, P.E.I.	7.0	Fort Wellington, Ont.	8.5
Point Pelee, Ont.	6.0	Fort Malden, Ont.	8.0
Georgian Bay Islands, Ont.	5.4	Fort Chambly, Que.	2.5
St. Lawrence Islands, Ont. (acres)	172.0		

Provincial parks, too, offer a wide choice of vacation pleasures. For the motorist, there are hundreds of roadside parks, equipped with tables and benches, cooking facilities and good water. These are usually chosen for their beautiful view or some special attraction, such as a bathing beach.

There are more than 5,000 hotels in Canada of which more than 4,000 operate all year. For motorists, there are thousands of motels and tourist homes. There is also specialized accommodation, ranging from camp-sites



Trail riding is a favourite pastime at the Prince Albert National Park near Waskesiu, Saskatchewan.



The Alexander Graham Bell Museum at Baddeck, N.S., where the frail aircraft, the *Silver Dart*, made the first flight in the British Empire in 1909.

to resort and hunting lodges, ski chalets, fishing camps and luxurious hotels of the chateau type.

The Canadian Government Travel Bureau, Ottawa, issues leaflets, booklets and maps on almost every aspect of travelling in Canada, including angling and hunting regulations, calendars of events, information on package tours, border crossing, admission of aircraft, camp grounds and trailer parks, summer courses, canoe trips, maps and even a booklet on the distribution of ragweed in Canada for the benefit of sufferers from hay fever. These and many other sources of tourist information are available on request.

When the Trans-Canada Highway, beginning at Victoria, B.C. and ending at St. John's, Newfoundland, is complete in the near future, it will provide motorists with one of the finest scenic touring routes in the world, passing through distinctive towns and villages and famous cities spaced along the miles of unspoiled countryside.

Travellers in the western part of Canada feel that they are witnessing history in the making; in the East, there are countless signs that much has already been made. The oldest city in North America is St. John's, the capital of Newfoundland. Newfoundland's scenery has strength and grandeur, the rugged coastline dotted with picturesque fishing villages. There is the charm of unforgettable place-names, like Come By Chance, Heart's Content, Witless Bay, Blow-Me-Down and Quidi Vidi; of a unique folklore as expressed in speech and song; and, above all, of a hospitable people, proud of the sturdy independence that characterizes the Newfoundlander.



In Newfoundland, the launching of a boat is an important event.

In contrast, Prince Edward Island, described by Jacques Cartier as "the fairest land that it may be possible to see", has a gentle, serene air, its neat white farms nestling composedly among lush green meadows or rich fields whose soil is a distinctive red. The birthplace of Confederation, Charlottetown has a population of less than 17,000 and life is so leisurely that it has never felt the need of a public transit system. Golf courses and miles of sandy beaches bring many travellers to "The Island", by plane or ship, or on the train and automobile ferry linking Cape Tormentine, N.B. and Borden, P.E.I.

Nova Scotia is the only province where children are still growing up speaking the Gaelic. In the ancient village of Grand Pré, at Port Royal Habitation and among the fallen ramparts of the Fortress of Louisbourg, history comes alive. Truly a vacationland, Nova Scotia has some of the most spectacular roads, offering endless variety of wooded seashore, orchard valleys and rocky bluffs. Its capital, Halifax, is one of the world's truly historic seaports, and its annual festivals—the Highland Games, the Gaelic Mod, the Apple Blossom Festival—are rooted in tradition.

New Brunswick is known as the "Picture Province" and is noted for its many scenic drives, its abundant hunting and fishing grounds, and its natural phenomena—the dramatic Reversing Falls at Saint John; the Hopewell Rocks



The Hopewell Rocks at the mouth of the Petitcodiac River, New Brunswick.



A gourmet's delight is the supper which is a feature of the Lobster Carnival at Summerside, P.E.I.

in Albert County; the Tidal Bore and the famous Magnetic Hill in Westmorland County. Gourmets relish the seafood in all the Atlantic provinces, particularly the delicate, little-known shad of New Brunswick. This province also claims a special vegetable of its own, a delicious fern-like green known as fiddle-heads. Here, too, may be found dulse, a tangy, salt sea-weed.



Horse-drawn sleighs or buggies are a prime tourist attraction in Montreal and Quebec. The ice monument is part of the decoration of Quebec City for its annual Winter Carnival.

A fly-in service brings guests to the ski hills in the Laurentian Mountains, north of Montreal.



In Quebec, province of contrasts, mammoth mining and hydro-electric developments are surrounded by placid farms and villages wherein no English is spoken; there are tiny fishing villages and Canada's largest city, Montreal, which is the second largest French city in the world; there are cottage handicrafts and giant industries. There is the Laurentian Mountain Playground, highly developed for sports and boasting many luxurious summer and winter resorts; there is the breath-taking beauty of the Gaspé Peninsula, the rock-bound fjord of the Saguenay, the historic cobbled streets of Quebec City, the only walled city on the continent, and there is the second seaport in North America, 800 miles from the sea, at Montreal. Claimed for France more than four centuries ago, Quebec is the French-Canadian heart of Canada, a fascinating blend of old and new.

Canada's capital draws many tourists. Almost half a million crossed Wellington Street to visit the Parliament Buildings in 1959.



Ontario, boasting a quarter of a million lakes and 80,000 miles of modern highways, provides every kind of vacation recreation and some of Canada's most attractive annual events, including the Stratford Shakespearean Festival, the historic Queen's Plate, the Ottawa Tulip Festival and the world's largest annual fair, the Canadian National Exhibition at Toronto. Ontario's southern tip, famous for fruit and tobacco growing, is in the same latitude as California, while its northern latitudes match those of Alaska. Its capital, Toronto, is a city of skyscrapers and ships, while the capital of Canada—Ottawa—is also within its borders. Ottawa, with its Archives and National Library, is a mecca for students, and the Parliament Buildings in Gothic style are the site of the colourful ceremony of the Changing of the Guard, performed daily during the summer.

Coloured lights illuminate the dramatic and world-famous Niagara Falls at night.





The first gondola lift in North America was opened at Banff in the summer of 1959. The \$500,000 lift carries passengers 4,950 ft. to the top of Sulphur Mountain. Each gondola can carry four persons, and has an hourly capacity of 450.

The vast central plain on which Manitoba, Saskatchewan and part of Alberta lie has a spaciousness and grandeur. The skies are brilliant blue, the horizon is limitless and there are few more beautiful sights than fields of grain waving gently in the bright sun as far as one can see. In the northern parts of the prairie provinces, there are vast woods and lakes well adapted to camping, fishing and hunting.

West of the prairies is the foothills country, where dude ranches are popular vacation spots and the famous Calgary Stampede is held every July. Beyond are the Rocky Mountains with two world-famous parks at Jasper and at Banff, and there the Great Divide separates the watershed, east and west. British Columbia has perhaps the greatest variety of scenery of any province, with Rocky and Selkirk Mountains in the east, the orchards of the Okanagan Valley, and miles of sea coast on the west. Vancouver, site of the annual International Festival, is a modern metropolis, while Victoria, the provincial capital, has many features reminiscent of England. The mildness of the coastal climate makes Vancouver Island and the coastal mainland in the south a wonderland of flowers almost all year long.

More travellers are finding their way north by plane and ship or by car along the Alaska Highway. The opening up of the North to industrial development and defence installations has aroused the curiosity of visitors.



Fishing—whether “off the end of the dock” or in a camp reached by chartered aircraft—is serious business to the northlander.

Canada's Visitor Industry

Travel between Canada and other countries has expanded to such an extent in the past two decades that, if it were considered as a commodity, receipts from its export would represent the third largest source of income from external sources, next to exports of newsprint and wheat, while disbursements attributable to Canadians travelling outside Canada rank first in comparison with the value of any single commodity imported. The effects of foreign expenditures in Canada are to stimulate those portions of the economy upon which they are concentrated, and to aid in a reduction or minimization of our travel deficit with other countries. In a market which is becoming increasingly more competitive, federal, provincial and other groups concerned maintain travel bureaus interested in developing facilities and attracting more visitors to Canada.

The volume of travel between Canada and other countries increased in 1959 to 58,072,600 visits, a gain of 1,972,600 visits over the figure of 56,100,000 in 1958. Entries into Canada by residents of other countries increased to 29,925,800 from 28,572,200 in 1958, while Canadians paid 28,146,800 visits to other countries in 1959 in comparison with 27,553,800 during the previous year.

Estimates indicate that visitors from other countries spent \$393,000,000 on travel in Canada, a gain of \$44,000,000 or between 12 and 13 p.c. over 1958, exceeding the previous record of \$363,000,000 established in 1957. Canadians visiting countries outside Canada spent an estimated \$593,000,000 on travel, an increase of approximately \$51,000,000 or 9 p.c. over 1958. The net effect was to increase the debit balance on travel account from \$193,000,000 in 1958 to a new high of approximately \$200,000,000 in 1959.

Travel between Canada and the United States in 1959 again experienced an expansion, when a total of 57,870,700 border crossings or 1,918,300 more than in 1958 were recorded. These crossings comprised 29,880,800 visits to Canada by residents of the United States and 27,989,900 re-entries of Canadians returning from trips to that country (including a small proportion who returned via the United States from visits overseas). The majority of the increase was attributable to 1,350,100 more visits by Americans, while 568,300 more Canadians travelled to the United States in comparison with 1958.

The most popular mode of transportation between Canada and the United States continued to be the automobile, a means of travel which has been subjected to an important statistical change in the method of recording. On October 1, 1959, the Department of National Revenue introduced a new procedure for admitting non-resident vehicles into Canada: non-resident

Woodsmen's skills are demonstrated in competition at special field days in many parts of Canada. Tree-felling and log-rolling are favourite items on the program.





The family picnic, so popular with city-dwellers particularly. Federal and provincial parks and roadside areas throughout Canada are provided with tables and benches, fireplaces, good drinking water and other facilities.

motorists must obtain a traveller's vehicle permit upon entry and surrender it at the port of exit when leaving. Exceptions to the rule are persons formerly designated as commuters, summer residents and locals, who are usually familiar to port officials and who may apply for a standing permit which must be shown each time they enter or leave Canada. Under the old procedure, motorists intending to remain within the jurisdiction

of the port of entry and return to the United States via the same port within 48 hours were allowed to enter Canada without applying for a traveller's vehicle permit, but were required to deposit their vehicle's state registration card with Canadian Customs officials, a system which obliged them to travel in Canada without proof of ownership of their vehicle.

The majority of travel between Canada and the United States is of a short-term nature, with approximately 85 p.c. of the Canadian visitors to the United States or vice versa remaining less than 48 hours. This short-term movement is facilitated by the relative ease with which border crossings are made and the proximity on either side of the international boundary of heavily populated areas, especially in the province of Ontario and the American states upon which it borders.

Expenditures of United States residents travelling in Canada in 1959 are estimated to have increased by some \$42,000,000 or between 13 and 14 p.c. to a new high of \$351,000,000 and are due to a 5 p.c. gain in the number of visits together with higher average expenditures. On the other hand, a 2 p.c. increase in the number of Canadians visiting the United States was accompanied by a rise of 8 p.c. in their expenditures, which in 1959 amounted to \$445,000,000 or \$32,000,000 more than the \$413,000,000 spent in 1958. Purchases of merchandise by Canadian tourists in the United States as declared under the \$100 customs exemption privilege totalled \$73,000,000 in 1959 and represented between 16 and 17 p.c. of Canadian travel expenditures.

New records were established as approximately 156,900 Canadians returned direct from visits to overseas countries while expenditures were estimated at \$148,000,000 (inclusive of expenditures by those returning via the United States), an increase of \$19,000,000 or 15 p.c. over the comparable



Motels are used extensively by the touring motorists. No reservations need be made, the car can be driven up to the front door and the tired driver can enjoy a comfortable bed, showers or baths, and, frequently, radio and television.

1958 figure. With the exception of immigrants and visitors entering Canada via the United States, non-resident travellers numbered 45,000 in 1959 compared with 39,700 in 1958, while their expenditures rose accordingly from \$40,000,000 to \$42,000,000. Part of the expansion in overseas travel to Canada may be credited indirectly to increased immigration from these countries, which often creates additional visiting from friends and relatives overseas. Of non-residents visiting Canada in 1959 after travelling direct from overseas countries, 75 p.c. indicated their purpose of trip as either tourism or visiting friends and relatives, another 14 p.c. had entered either to render temporary professional services or as members of the clergy. Students accounted for nearly 5 p.c. of the visitors from overseas countries while the remainder were made up of diplomats and members of allied forces, members of crews and persons travelling in transit, entertainers, etc. Furthermore, of all the visitors entering Canada for the purposes mentioned, over half had originated in the United Kingdom. Travel between Canada and overseas countries seems likely to expand in the future as facilities are improved and with a relaxation of restrictions on travel allowances by many of the overseas countries, especially those of the United Kingdom.

The balance of payments on travel account between Canada and other countries for 1954 to 1959 were, in millions of dollars:—

<i>Item</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>
Account with the United States—						
Credits.....	283	303	309	325	309	351
Debits.....	320	363	391	403	413	445
Net.....	-37	-60	-82	-78	-104	-94
Account with Overseas Countries—						
Credits.....	22	25	28	38	40	42
Debits.....	69	86	107	122	129	148
Net.....	-47	-61	-79	-84	-89	-106
Account with All Countries—						
Credits.....	305	328	337	363	349	393
Debits.....	389	449	498	525	542	593
Net.....	-84	-121	-161	-162	-193	-200

The provincial parliament building in Regina, beside the beautiful artificial Lake Wascana, is a regal landmark in this prairie city.





Opened in 1959, the \$6,000,000 Queen Elizabeth Theatre in Vancouver is a civic auditorium featuring wave-like acoustical baffles in the ceiling and under each of its 2,800 seats. Its vast (9,250 sq. ft.) stage is the largest in Canada and one of the largest in the world. Other features include a drive-in box office, a 300-car underground parking lot, a restaurant and a huge patio with flowers and a fountain for intermission strolling. Here the Vancouver Symphony Orchestra waits for a signal from Conductor Bruno Walter's baton.

The Arts in Canada

Recent years have seen a steadily growing self-assurance in the arts in Canada which can almost be called revolutionary. Canadian artists can now hope for recognition at home without first receiving the nod of approval from the critics of London, Paris and New York. Canadian paintings and books are being produced and sold in ever greater quantities and the construction of several major arts centres across the country has provided a badly needed showcase for the talents of Canadian performers. From comparative indifference towards the arts, Canadians have turned to active partisanship. Few of the large newspapers are without permanent music, drama and art critics and the resignation of the Director of the National Gallery last year caused a stir which would have been inconceivable ten years earlier.

The most striking evidence of the important place the arts have come to assume in most Canadians' minds is the widespread support given the recently created Canada Council. Established in 1957 to promote the study, enjoyment and production of works in the arts, humanities and social sciences, the Canada Council was voted \$100,000,000 from the public treasury. Set up in two equal funds, this money provides \$50,000,000 for capital assistance to universities expanding their building facilities in the arts, humanities or social sciences and about \$2,500,000 annual interest from an endowment fund of \$50,000,000 for a program of assistance to individuals and organizations in the arts, humanities and social sciences. As a major experiment in public patronage, the creation of the Canada Council seems strangely at odds with Canada's traditional attitude to the arts. It is the most concrete evidence of the growing conviction that no nation can be called truly great which continues to ignore this important aspect of its development.

Music

There are at present about 20 symphony orchestras active in Canada, all suffering in varying degrees from lack of finances. Sustaining funds, subsidies, and private donations enable each of them to pay its way from year to year but offer little security for the future. The Canada Council assists the ten major symphony orchestras to the extent of some \$200,000 per year and broadcast revenue from the CBC provides additional income for Toronto, Montreal, Winnipeg, Vancouver and Ottawa. Such outside sources provide some encouragement for expansion and development but all Canadian orchestras must continue to rely primarily on local support.

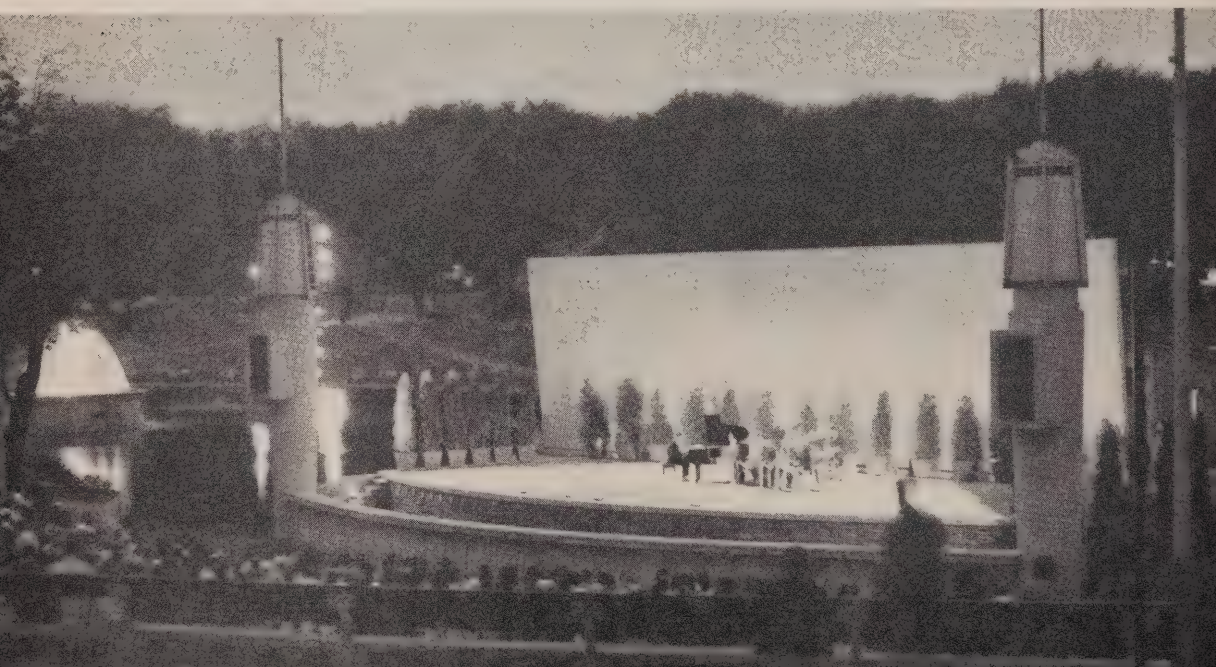
Most orchestras carry on active campaigns to broaden the base and extent of that support. The number of children's and students' concerts presented was increased and there was a continued effort to transport live orchestral music to centres where it is not otherwise available. Of the ten orchestras to receive Canada Council Grants, (Toronto, Montreal, Vancouver, Winnipeg, Calgary, Edmonton, Halifax, Quebec, Ottawa and Victoria,) all embarked on programs which took them away from their home city. The most dramatic such venture was undertaken by the Edmonton Symphony which flew its 65 members 650 miles north to Yellowknife, N.W.T., to give what must have been two of the most northerly symphonic concerts ever

presented. A further attempt to create a wider interest in symphonic music was made by the Edmonton, Halifax, Quebec, Victoria, Calgary and Winnipeg orchestras which presented series of free or reasonably priced concerts during the summer.

A growing interest in chamber music in this country during the past year was reflected in the successful seasons conducted by many of the smaller Canadian music groups. In Toronto, the Pro Arte and Hart House Orchestras gave their regular series of concerts and the latter, assisted by the Canada Council, toured some 12 centres in Ontario and the Maritimes. In Montreal, long the home of the highly successful McGill Chamber Music Orchestra, a new chamber music group, the Orchestra da Camera, presented its first series of concerts last year under Conductor Remus Tzincoca. Under the sponsorship of the Canada Council, the Montreal String Quartet presented 12 concerts covering a large part of the quartet repertoire including all the last quartets of Beethoven. The Canada Council also enabled the Baroque Trio of Montreal to appear on tour in Quebec and the West and assisted Les Jeunesses Musicales to sponsor the Trio Ebert in Quebec and the Maritimes.

Chamber music also played a more important part in the 1959 summer festivals. At Stratford, 27 of Canada's finest string and woodwind players were gathered together to form the National Festival Orchestra. Under the guidance of the New York teacher and violinist, Oscar Shumsky, and inspired by the solo playing of such artists as Mr. Shumsky himself, Leonard Rose, Robert Bloom, Julius Baker and Claudio Arrau, the orchestra gave some of the most memorable ensemble performances in the history of the Festival. An interesting series of chamber music concerts was also presented at the University of Saskatchewan Golden Jubilee Music Festival held in Saskatoon under the direction of Murray Adaskin. Soloists and instrumentalists from Canada and the U.S. joined local musicians during a six-

Beautiful Lafontaine Park in Montreal is the setting for "Showcase Montreal"—a series of Sunday night concerts by Montreal musicians.





Part of the 75-instrument Philharmonic Youth Orchestra of Montreal, which is conducted by 15-year-old prodigy Boris Brott, son of the famous Canadian composer and violinist, Alexander Brott.



Dr. Helen Creighton, noted collector of folk songs, records the singing of a Nova Scotia fisherman against a background of lobster pots.

week period in 18 widely varied programs. More than one quarter of the 80 works presented were by native or resident Canadians, including 8 pieces specially commissioned for the festival. The new works presented were by Robert Turner, Sonia Eckhardt-Gramatte, John Weinzwieg, Clermont Pépin, Jean Papineau-Couture, Udo Kasemets and two student composers, Boyd MacDonald and Paul Pedersen.

Elsewhere the Canadian composer fared less spectacularly but continued to gain a hearing. The Vancouver Festival featured première performances of Harry Somers' *Third Quartet* and an orchestral work entitled *Triptych* by Pierre Mercure. Most Canadian orchestras included at least one Canadian work in their regular season and the Canada Council presented grants to five symphony orchestras (Montreal, Ottawa, Toronto, Winnipeg, and Vancouver), to enable them to commission and perform original compositions. As a result a violin concerto by Jean Coulthard received its première by the Vancouver orchestra.

Children playing and children listening: the R. H. McGregor School rhythm band is conducted by one of its members in the final concert of the 17th Annual Kiwanis Music Festival in Toronto, in which 23,000 individual musicians participated during the winter of 1960.



In Edmonton, 600 school children attend a concert put on for them by the Edmonton Symphony Orchestra.





The second act of *La Forza del Destino*, by Verdi, produced by the Canadian Opera Company in 1959.

Opera

A taste for what Dr. Johnson once referred to as an "exotic and irrational entertainment" has been slow in developing in Canada. Nevertheless, the past ten years have seen a substantial increase in operatic activity, notably in Toronto where the Opera Festival Association of that city has presented a regular season in the Royal Alexandra Theatre. This year, the company was incorporated as the Canadian Opera Company under its permanent director, Herman Geiger-Torel. With guest soloist Giuseppe Campora, of the Metropolitan Opera and a largely Canadian cast including such names as Ilona Kombrink, James Milligan, Don Garrard and Jan Rubes, the company presented three operas during a two-week season. Verdi's *La Forza del Destino* was directed and designed by Elemer Nagy and conducted by Ernesto Barbini. *The Love for Three Oranges* by Prokofieff was directed by Mavor Moore, conducted by Walter Suskind and designed by two young Canadians, Murray Laufer and Marie Day. Herman Geiger-Torel directed Rossini's *The Barber of Seville* which was conducted by Ettore Mazzoleni with sets and costumes designed by Brian Jackson. Following the Toronto productions a reduced company toured 22 Ontario and Western centres with a chamber version of *The Barber of Seville* playing in church halls and school auditoria before some 22,000 spectators.

To a large extent the placing of the opera company on a fully professional basis was made possible by grants from the Canada Council, but the Association continues to enjoy strong local support in Toronto. In order to ensure that support in the future be on a national level, plans were outlined for the creation of a Canadian Opera Guild which will have members in all parts of the country. Further evidence of the important place opera is beginning to assume in the country's cultural life was the announcement that a fully equipped opera theatre would be included as part of the new Royal Con-

servatory of Music planned as part of the multi-million dollar expansion program of the University of Toronto.

Although Toronto is generally acknowledged to be the main centre of Canadian opera, a steadily growing interest in this art was in evidence throughout the country in 1959. The three major summer festivals all featured operatic productions. Vancouver staged Gluck's 18th century masterpiece, *Orpheus*, directed by Hanya Holm, designed by Donald Oenslager and conducted by Oivin Fjelstad with Kerstin Meyer and Mary Costa in the leading roles. Stratford presented a new English translation of Jacques Offenbach's satirical operetta, *Orpheus in the Underworld*, by Toronto writers Robert Fulford and James Knight. The production starred American soprano Irene Jordan and baritone Marial Singher and was designed by Brian Jackson, directed by Tom Brown and conducted by Louis Applebaum. The Montreal Festivals also featured the work of the popular 19th century Parisian composer in a production of *Barbe Bleue* directed by Guy Hoffman and conducted by Jean Beaudet. Montrealers also had the opportunity of seeing two performances of Verdi's *Macbeth* sponsored by the Montreal Opera Guild under the conductor Emil Cooper.

Opera also had an important place in the programming of the CBC during 1959 when Massenet's *Manon* was presented on TV and two Canadian operas, *Night Blooming Cereus* by John Beckwith and James Reaney and *Une Mesure de Silence* by Maurice Blackburn, were heard on radio.

Although the state of Canadian opera has never been healthier, it is still necessary for artists to go abroad to seek opportunities not available in this country. That so many have done so attests to the quality of Canadian talent and to the training received in Canada. Prominent among those who made operatic headlines in 1959 were Toronto baritone James Milligan who made his debut at London's Covent Garden as Escamillo in *Carmen*, Jon Vickers, of Prince Albert, who sang opposite Maria Callas in Cherubini's *Medea* also at Covent Garden, the young Toronto soprano, Teresa Stratas, who won the Metropolitan Opera scholarship contract and Louis Quilicot who sang the leading role in Donizetti's *The Duke of Alba* at the Festival of Two Worlds in Spoleto, Italy.



The National Industrial Design Council is an independent group of manufacturers, retailers, designers, architects and consumers, with headquarters and showroom at the Design Centre, Lorne Building, Ottawa. Through exhibitions, lectures, publications and special programs, the NIDC promotes good industrial design.



This industrial administration building was the first to feature complete stainless steel curtain-wall construction.





"... all the perfumes of Arabia will not sweeten this little hand."—Lady Macbeth.

Theatre in English Canada

Highlighting and perhaps overshadowing the English-Canadian theatrical scene were the productions at the now world-famous Stratford Festival in Ontario. Two Shakespearean plays were featured in a season which drew from the three theatrical traditions affecting this country. From England, director Peter Wood, designer Desmond Heeley and from the U.S.A., stars Irene Worth and William Sylvester, combined their talents in a colourful production of *As You Like It*. Canadian directors Jean Gascon from Montreal and George McCowan from Toronto collaborated with Montreal designer Robert Prévost to produce a powerful version of *Othello* with Douglas Campbell, Douglas Rain, Frances Hyland, Kate Reid and William Sylvester. Although Festival authorities at year end reported a small drop in attendance, and a substantial deficit, the Stratford productions continue to receive generous acclaim and support from public and critics alike.

Elsewhere the English theatre continued its struggle without the benefit of international publicity. By far the busiest centre was Toronto where there is to be found the largest concentration of actors, directors and technicians. Embarking on its sixth season, the Crest Theatre, at present one of Canada's few permanent professional English repertory companies, put the nucleus of its acting company under 40-week contracts. The New Play Society invited three Toronto directors each to stage a play of his choice using professional actors and members of the NPS Drama School. Several small groups brought together specifically for a production blossomed sporadically on the Toronto scene but none has made a permanent niche.

Toronto is also the headquarters of Canada's only major touring company, the Canadian Players. Last year the group wound up its fifth season during which it produced four plays across North America to audiences which totalled some 95,000. The 1959-60 season featured *The Devil's Disciple* and *The Comedy of Errors* on the Canadian circuit and *The Cherry Orchard* and *The Taming of the Shrew* on the American tour.

Outside of Toronto, the Montreal Repertory Theatre represented an outpost of English drama in a city where French remains the predominant language of the stage. On the West Coast, theatre continued to maintain a toehold, the principal activity taking place during the annual Vancouver Festival. Last season featured a production of Schiller's *Mary Stuart* with Eva LeGallienne, Viveca Lindfors, Lloyd Bochner, Bruno Gerussi, Robert Christie and Robert Goodier. The Festival also saw the opening of a new Canadian musical revue, *Jubilee*, written and produced by the originators of *My Fur Lady*. A heat wave and subsequent poor attendance at Toronto's Royal Alexandra Theatre forced the show to close however.

Elsewhere original Canadian productions seemed to fare as badly. Supported by Canada Council funds, the Crest Theatre staged a musical drama entitled *Ride a Pink Horse* by Toronto writer John Gray and composer Louis Applebaum which was a disappointment at the box office. The Stratford Festival and a Toronto daily newspaper named the winners of a jointly sponsored playwriting contest. It was announced that the winning play, *To the Canvas Barricade* by Donald Jack, would be presented on the Festival stage during the 1961 season. Two of the runners up, *The Teacher* by John Gray, and *Blind Man's Buff* by Fred Euringer will be presented in the Avon Theatre in 1960.

Theatre in French Canada

By contrast, French theatre in Canada presents a picture of bustling activity and vitality centred, it is true, almost exclusively in Montreal. In spite of dwindling audiences from the rosy days of 1956-57 when eleven companies performed in the French metropolis, six professional theatres opened their doors for the 1959 season. Of these the most celebrated and widely known outside the province, Le Théâtre du Nouveau Monde, settled down for a period of relative quiet after several seasons of touring international centres from New York to Paris. La Comédie Canadienne, the city's newest and most elaborately housed theatre, began its second season with a production of *Bousille et les Justes* by its director-star, Gratien Gélinas. Having already scored a triumph at its première in the Montreal Festivals, the play at year's

end promised to run well into 1960. Two well-established troupes, Le Rideau Vert and the Theatre Club, held seasons in their own premises. The recently formed "La Poudrière", situated in an old powder magazine on St. Helen's Island, launched its second season of international plays. During its first year, in addition to productions in French, English, German and Italian, the group presented poetry readings, recitals, chamber music concerts and an opera. While most of the pocket theatres so popular several seasons ago have now disappeared, one such troupe, the Anjou, scored one of the hits of the season with *Oscar*.

The French-Canadian playwright also fared better than his English speaking colleague. In Montreal three original plays were staged during 1959. *Les Taupes* by François Moreau was named winner of the second playwriting competition sponsored by Le Théâtre du Nouveau Monde and was produced with assistance from the Canada Council. *Edwige*, another first play by Maurice Gagnon, was staged by Le Rideau Vert.

In spite of this great variety of activity, however, Montreal critics at the end of the year began speaking of the "crisis" of the Montreal theatre as attendance figures dropped, sending the already harassed troupes even deeper into the red. The experience of 1959 in both French and English theatre seemed to indicate that the role of subsidy at either the local or the federal level will become increasingly important if Canadian theatre is to grow and expand.



Sometimes called the Charlie Chaplin of French Canada, Gratien Gélinas portrays the pathetic little nobody; in real life he is a playwright, director, producer and founder of La Comédie Canadienne. He is shown here in *Bousille et les Justes*.



An emotional scene between a man and his adopted son in *Les Taupes* (The Moles), a Canadian drama written and produced in French and dealing with the breakdown of an entire family when long-standing scandal suddenly erupts.



The portrait wood-carvings of the rugged, individualistic farmers and fishermen of rural Quebec have made famous the village of St. Jean Port Joli, founded nearly 200 years ago.



Much handwork goes into the creation of the pottery turned out in this plant near Collingwood, Ont.



Handicrafts and home arts, both old and new, flourish throughout Canada. Each year, at local and regional fairs and exhibitions, non-commercial home crafts are displayed in competition. The Canadian Handicrafts Guild encourages both home and commercial handicrafts.



The "old-fashioned quilting-bee" is still in fashion in many rural communities, where the quilts made today become the heirlooms of tomorrow.

On Cape Breton Island, Nova Scotia, a chair-seat is woven by hand.





Les Sylphides, by Les Grands Ballets Canadiens.

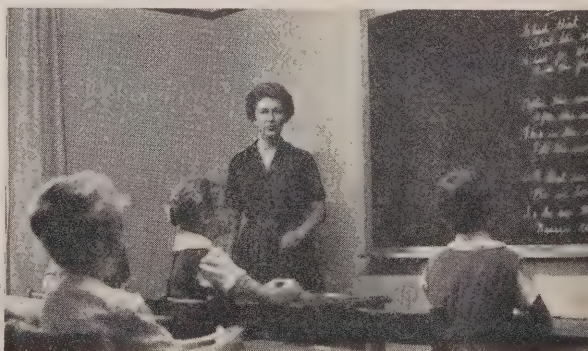
Ballet

Though hardly 20 years old, Canadian ballet has developed from hesitant amateur beginnings into a major theatrical enterprise with an annual budget of more than three quarters of a million dollars and close to 100 dancers in three professional companies. It is also steadily gaining in reputation abroad where the National Ballet Company has logged many thousands of miles on tour playing in centres as distant as Mexico City and Los Angeles. In spite of steadily increasing interest and support, however, none of the companies can meet expenses from ticket revenue alone. Grants from the Canada Council have done much to alleviate the financial burden of this costly art, but the existence and growth of Canadian ballet still

depends in large measure upon the generosity of its patrons.

The past year has been one of considerable achievement. The Canadian National Ballet, completing its eighth season, announced that it had performed before 91,000 Canadians and 77,500 Americans in a total of 148 performances. Its four-week season at the Royal Alexandra Theatre in Toronto was one of its most successful with a total attendance of 40,402 reported. In 1959, the National Ballet School was established in Toronto where, under principal Betty Oliphant, some 13 residential and an equal number of day students began full time study of ballet and academic courses. Another 250 students attend from one to ten ballet classes a week. Celia Franca, artistic director and leading dancer of the National since its formation in 1951, last year retired from the stage to devote her time entirely to administration and teaching. During the past year the company added three new ballets to its repertoire all choreographed by the leading dancer, David Adams. The music of Chopin and Tchaikovsky was used for *Pas de Deux Romantique* and *Pas de Six* while *The Littlest One* was set to music by Canadian composer John Beckwith.

A new ballet company became established with the first extended season of Les Grands Ballets Canadiens of Montreal. Founded in 1953 by Latvian-born dancer,



At the day and residential National Ballet School, a staff of six teachers conducts primary and secondary school classes up to Grade 12 during a 5½-day week. The children also receive seven classes in ballet, Spanish dancing and eurhythmics.





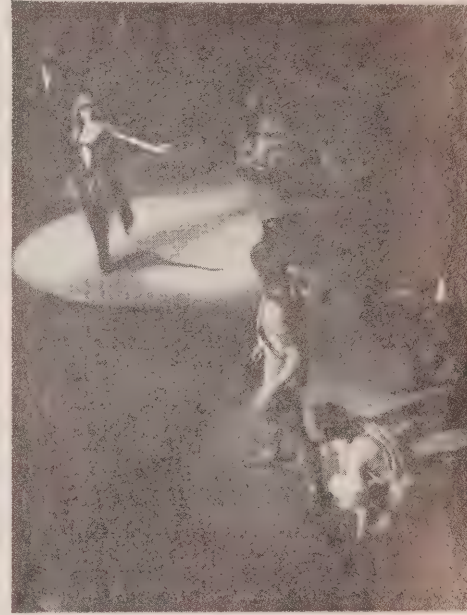
A scene from *Pineapple Poll*, a rollicking ballet based on music by Sir Arthur Sullivan and produced by the National Ballet of Canada.

The Fisherman and His Soul is a new Canadian ballet with choreography by Grant Strate and music by Harry Somers; it was produced by the National Ballet of Canada.

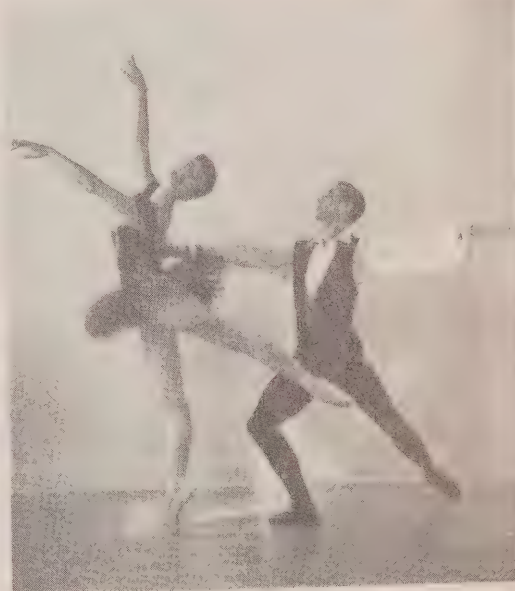


Mme. Ludmilla Chiriaeff, the group had previously performed mainly on television. This year it appeared at La Comédie Canadienne in Montreal and later at the American Dance Festival at Jacob's Pillow, Massachusetts. The company was loudly acclaimed by the American critics for its technical virtuosity and for its program which included an original ballet based on Nova Scotia folk legends and entitled *Sea Gallows*, by the company's leading dancer, Eric Hyrst, with music by Michel Perrault. Following its appearance in the U.S., the company toured 13 centres in Quebec and the Maritimes where they danced to piano accompaniment before large audiences many of whom had never witnessed live ballet before. For its Easter tour the group prepared a new ballet by Ludmilla Chiriaeff entitled *La Belle Rose*. Based on French Canadian folk tales, this ballet was also set to music by Michel Perrault.

Canada's oldest dance troupe, the Royal Winnipeg Ballet, directed by Canadian-born and trained dancer and pianist, Arnold Spohr, presented in 1959 some 12 ballets in 15 cities of the west during a rugged two-week tour. The company also appeared in Winnipeg where it introduced three new Canadian ballets, *Les Whoops-De-Doo* by Toronto choreographer, Brian MacDonald, *Brave Song*, by Robert Moulton with music based on authentic Indian songs and *Concerto* by founder Gweneth Lloyd.



The choreography for *Suite Canadienne*, produced by Les Grands Ballets Canadiens, was composed by Ludmilla Chiriaeff to music by Michel Perrault.





The Lorne Building, Ottawa, houses the National Gallery of Canada and was formally opened on Feb. 17, 1960. The inaugural exhibition displayed the work of some of Europe's greatest old masters.

The Visual Arts

Painting, which has perhaps always been the most publicized of Canadian visual arts, received even more publicity during 1959 owing to the resignation of Alan Jarvis, Director of the National Gallery. An outspoken champion of modern art and certainly this country's most quoted opponent of ugliness or drabness, Mr. Jarvis during his career at the Gallery had done much to awaken controversy and interest in contemporary Canadian painting. That this interest is real and not merely academic is attested to by the increasing sale of Canadian paintings across the country and by the steadily growing number of Canadians making use of the facilities of their local art galleries. During the 1959 season, attendance at the Montreal Museum of Art, for instance, reached a record total of 90,000. It is now possible for many professional painters to realize respectable incomes from the sale of their works.

A reflection of the increased interest of Canadians in painting was also evident during 1959 in the number of competitions and commissions offered by civic and business officials. In celebration of its centenary, Granby, P.Q. held an international art exhibition and competition which attracted entries from 13 countries. A total of \$2,500 in prizes was awarded to five winners, three from Montreal and two from Ontario. The Stratford Festival, which in previous years had displayed the Biennial Exhibition of Canadian Art organized by the National Gallery, during its 1959 season inaugurated an invitation exhibit of ten of Canada's leading painters. The show attracted a good deal of attention and resulted in the sale of many of the works displayed. The Vancouver Festival held a comprehensive exhibit of the arts and crafts of Quebec which included paintings by many contemporaries. The activity of the National Gallery was considerably curtailed during the past year owing to the preparations for moving into the new Lorne Building. Annual exhibitions were held by the Canadian Society of Painters in Watercolour and the Canadian Society of Graphic Artists. Abroad, Canadian artists were strongly represented in the International Design Conference held in Aspen, Colorado and in New York at an exhibition held in Canada House. The noted Quebec abstract painter, Paul Emil Borduas, held his first exhibition in Paris.



Lord Beaverbrook took part in the opening ceremonies of the Beaverbrook Art Gallery in Fredericton, N.B. on Sept. 16, 1959.

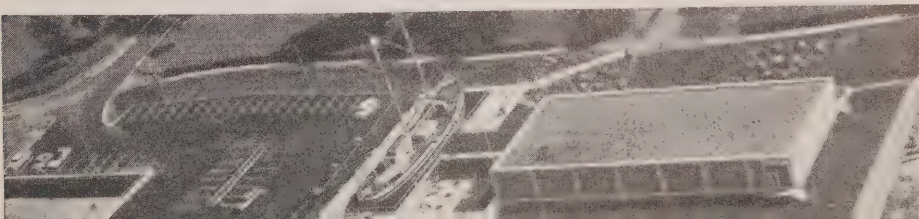
A particularly outstanding event of 1959 was the presentation of an art gallery, collection and endowment fund to New Brunswick by its most celebrated native son, Lord Beaverbrook. The new Beaverbrook Gallery is situated in Fredericton on the banks of the St. John River and houses the publisher's extensive collection of old masters, British and Canadian paintings. The first gallery to be opened in the Maritime provinces, the Beaverbrook bequest will undoubtedly make a great contribution to the stimulation of interest in the visual arts in that section of Canada.

The Canada Council continued to provide substantial assistance to Canadian painters either by means of travel and study grants which would enable them to devote increased leisure to their art or by purchase grants to Canadian galleries. Aba Bayevsky was enabled in this way to visit India where he completed many sketches of life in that

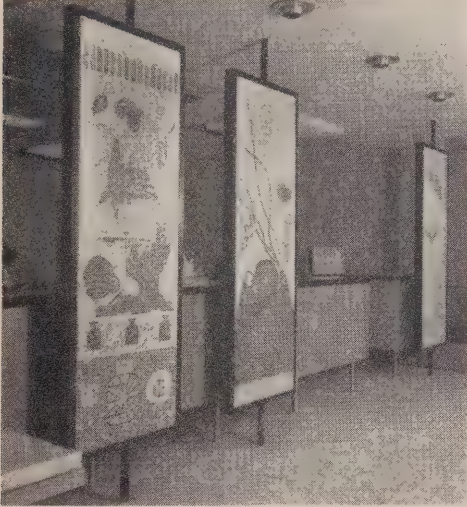
country, while B.C. Binning visited Japan to study Japanese art. Galleries in Toronto, Vancouver, Winnipeg, London, Montreal and Victoria added to their Canadian collections from current exhibitions with funds granted by the Council.

The other visual arts, generally speaking, received far less public attention. Canadian sculptors, ceramists and architects continued to work in relative anonymity although there were signs of a growing recognition of their art. Once again the Canada Council provided the badly needed financial aid without which the galleries, however willing, are unable greatly to extend their activities in these fields. A series of commission grants to six galleries and museums (Montreal, Toronto, Victoria, Vancouver, Calgary, Winnipeg), enabled these institutions to commission original works of sculpture for their permanent collections. The government of Quebec continued to lead the field among provincial patrons of the arts. Its annual competition, which this year was devoted entirely to sculpture, offered five prizes totalling \$4,000. "Canadian Ceramics 1959", an exhibition of pottery sponsored by the Canadian Handicrafts Guild and the Canadian Guild of Potters, displayed some 200 pieces by 88 Canadian ceramists in Montreal and Toronto.

Opened in 1959, the Vancouver Centennial Maritime Museum at Kitsilano Park has a specially-built drydock in front of the building, where rests the famous RCMP schooner, the St. Roch, only ship in the world to have completely circumnavigated the North American continent.



The larger than life-size figure of a race-horse and a jockey, by William Kettlewell, dominates the main entrance at Toronto's New Woodbine Racetrack. It is made from copper-silicon-manganese tubing and copper sheeting, and stands on a pedestal rising out of a pool.



The recently completed Provincial Laboratory of Saskatchewan has an entrance hall adorned with three mosaics, based on laboratory themes, by W. Neisen.

Propelled into the unfamiliar limelight as a result of the 1958 Toronto city hall competition, architecture continued to attract increasing curiosity and attention. The changing face of Toronto's University Avenue came in for considerable criticism from disgruntled journalists and laymen familiar with some of the more spectacular city planning being carried out currently in Europe. More favourable comment was provoked by the winning design in the Winnipeg city hall competition, and by the new Architecture Building of the University of Manitoba. The opening of new quarters for one of Canada's five architectural schools was marked by an important exhibition of the work of the Swiss-born architectural innovator, Le Corbusier. This exhibit, which will be seen in Montreal, Toronto, and Vancouver as well, did much to stimulate interest in a less publicized art.



Unusual sculpture in an unusual place: made of fibreglas with mosaic, this representation of a family group by Sarah Jackson stands at the entrance to a Montreal supermarket.

"Flight and Its Allegories" is the title of this 72-ft. mural by Kenneth Lochhead in the International Lounge at Gander Airport, Newfoundland.



Writing

Although it is still not possible for even the most successful Canadian novelist to live on the proceeds of his art alone, there are many encouraging signs that the profession of letters is gaining both in prestige and prosperity. More Canadian books are being published each year and the market for such books is constantly expanding. Evidence of the steadily increasing Canadian reading public was the formation this year of the Reader's Club of Canada, a book club similar to many such organizations in the U.S. with an entirely Canadian list. In 1959 a substantial cash prize was added to Canada's most coveted literary awards, the Governor-General's medals. These awards were also presented for the first time in 1959 to works in French as well as English.

About a dozen English novels of quality appeared during the year, of which Hugh MacLennan's *The Watch that Ends the Night* was selected as winner of the Governor-General's Award for fiction. *Prairie Harvest* by Arthur Storey received the Ryerson Fiction Award while Mordecai Richler's *The Apprenticeship of Duddy Kravitz*, *The Township of Time* by Charles Bruce, *Every Man is an Island* by Ronald Hambleton, *Psyche* by Phyllis Brett Young and *The Double Hook* by Sheila Watson also deserve mention. In the field of poetry the remarkable success of the collected poems of Irving Layton was a particularly encouraging phenomenon. Not only did *Red Carpet for the Sun* receive the Governor-General's award for poetry but achieved something of a unique distinction in this country by becoming almost a best seller.

Although no Governor-General's award was made for non-fiction, there was substantially more written in this category than in the previous two. The preponderance of non-fiction possibly reflects the growing interest on the part of Canadians in the sources of their national character. No fewer than four histories of Canada appeared, from Donald Dickie's *My First History of Canada* to Donald Creighton's *The Story of Canada*, a condensed version of his earlier *Dominion of the North*.

In French, M. André Giroux was awarded the Governor-General's medal for his novel, *Malgré Tout, la Joie* and Mgr. Félix-Antoine Savard received



In May, 1960, Sparks Street in Ottawa was transformed into Canada's first shopping mall. Traffic was stopped and three sidewalk restaurants, flowers and trees, sandboxes and swings, a fountain-pool and a special events stand, all in brilliant colours, appeared.



the award for non-fiction for *Le Barachois*. Also published was a first novelette by a promising young authoress from Quebec, Marie-Claire Blais, whose *La Belle Bête* created considerable critical comment.

Evidence of the rising standards of Canadian typography and book production was forthcoming during the recent Exhibition of the Art of the Book in Leipzig where two of the three medals awarded went to Canada. Carl Dair and Leslie Smart, both of Toronto, won the silver and bronze awards for their settings of Canadian poems in a four page folio. Further attention was focused on Canadian book design during the 1959 International Design Conference held at Aspen, Colorado at which 150 Canadian books were exhibited.

The Canada Council, in recognition of the problem facing Canadian authors and publishers, last year established a policy of aid to publication in both French and English. A total of some \$30,000 was set aside to aid the publishing of Canadian writing in three ways; grants to writers, block purchases, or grants to publishers to enable them to reduce the retail price of the books.

UNESCO

The Canadian National Commission for UNESCO was formed in 1957 as an agency of the Canada Council to co-ordinate the work of the many educational, scientific and cultural organizations working in the country and to act as a liaison with Canadian bodies and UNESCO headquarters in Paris. In the past year the activities of this body have been concerned mostly with the ten-year "Major Project" to promote a mutual understanding of eastern and western cultural values. The aim of this work is to contribute towards greater understanding between oriental and occidental countries through exhibitions, exchanges and education. As a result of the efforts of the Commission, many governmental and non-governmental agencies have taken the initiative in promoting this project in the context of their own programs. The National Film Board and the Canadian Film Institute co-operated to compile a catalogue of films on Asia available in Canada, and the National Gallery has arranged a series of free public lectures on Asian art. A regional conference was also sponsored by the Commission and held in Vancouver at which many aspects of Canadian and Asian arts and education were discussed.



The Mill of Kintail near Almonte, Ont., formerly the summer home and studio of Robert Tait McKenzie, noted doctor, sculptor and pioneer physical educationalist, is now a museum. Dr. McKenzie's models of masks depicting the human face under various forms of stress are widely used in medical schools.



Two of Canada's internationally famous comedians, Wayne and Schuster, and their "leaning tower" skit. Cameras and props are all placed at the same angle as the set, giving the actors the illusion of leaning sideways.



It was necessary to introduce a new actress in the role of Maggie Muggins, as the children's television program has proved so popular for so long that the original Maggie outgrew it.

Cultural Organizations

In addition to the Canada Council there are many important organizations engaged in the encouragement and promotion of the arts. A few of these, such as the Royal Society, (founded in 1882 for the promotion of development in science and literature), and the Royal Canadian Academy of Arts, (founded in 1880), receive grants from the national treasury. Most of the groups, however, are financed and directed by private enterprise. One of the most active of these is the Canada Foundation. Among the more important professional cultural organizations maintaining membership in the Canadian Conference of the Arts may be mentioned the Royal Architectural Institute of Canada, the Canadian Authors Association, La Société des Écrivains Canadiens, the Federation of Canadian Artists, the Canadian Music Council, the Canadian Handicraft Guild, Canadian Guild of Potters, Canadian Group of Painters, Canadian Society of Painter-Etchers and Engravers, Sculptors Society of Canada, Canadian Society of Graphic Arts, Canadian Society of Landscape Architects and Townplanners, the Arts and Letters Club, the Canadian Ballet Association and the Canadian Society of Creative Leathercraft.

Radio and Television

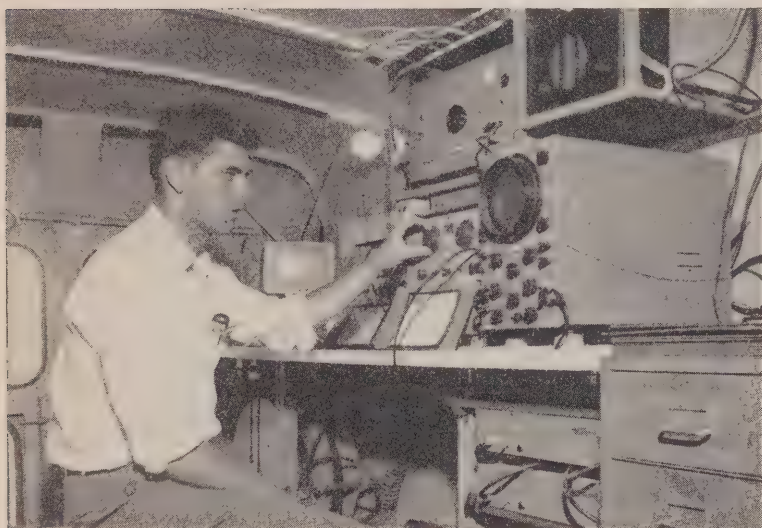
Canada's geography and the facts that most of its people inhabit a narrow 4,000-mile strip along the southern boundary, consult their watches in seven of the world's 24 time zones and that nearly one-third of them have French as their mother-tongue complicate the provision of national radio and television service. Nevertheless, radio is now available to 98 p.c. of the Canadian population, and television to more than 92 p.c.

The Board of Broadcast Governors, responsible to Parliament for the regulation and supervision of all broadcasting in Canada, grants licences for new radio and television stations. There is a publicly-owned system—the Canadian Broadcasting Corporation—and a system of privately-owned stations, most of which are members of the Canadian Association of Radio and Television Broadcasters. There are 29 CBC and 192 privately-owned radio stations, and 13 CBC and 45 privately-owned television stations.

The CBC operates three radio networks—one French and two English—comprising the 29 CBC stations and 101 of the 192 privately-owned ones. The CBC has recently developed nine stations in the north as part of the national service. On Christmas Day, 1959, Canadian radio listeners were able to hear a contribution about Christmas in Yellowknife, N.W.T. National programming is also fed to one English and one French television network.

Canada is second in the world in terms of number of television transmitters in use, although only 78 p.c.—or about 3,400,000—of Canadian homes are equipped with TV. In radio, about 95 p.c. of programs broadcast during 1958-59 were Canadian produced. In the more demanding and expensive medium of TV, the balance is about 59 p.c. Canadian on the English network and approximately 75 p.c. Canadian on the French network. In terms of live television production, Canada now ranks second in the world.

To span the country with radio coverage, the CBC has installed low power relay transmitters connected to the wire lines which link its network stations. In television, a parallel development has resulted in the establishment of 14 satellite transmitters.



Cable installations bringing pay-as-you-see TV to some 13,000 residents of Etobicoke, a suburb of Toronto.





The first province to produce TV programs specifically for use in schools, Manitoba reaches 80 p.c. of its school population by live broadcasts from Winnipeg and Brandon, and the remainder by kine-scope. Dramatized programs on social studies, English and mathematics were seen by 23,000 children in 69 schools. Seeing and hearing King John in "What is Magna Carta?" and Geoffrey of Monmouth in "The World's Diary" infused life into the teaching of history.

The National Program Service. Most national programming originates in five main production centres: Vancouver, Winnipeg, Toronto, Montreal and Halifax. Programs are planned both regionally and nationally as, for example, the local and national farm programs on radio and television.

In addition to the substantial amount of Canadian production—the CBC alone produced 60,000 programs in 1958-59—the networks carry outstanding programs from other countries. Some programs shown on TV are fed directly from United States networks via the microwave relay. In June, 1959, when Queen Elizabeth departed from London airport for Canada, the BBC and the CBC took the opportunity to inaugurate the "slow scan" process, by which film for television can be transmitted across the ocean by wire. Improvements have been made since then and Canadians regularly see a few feet of film of special events which have taken place in Europe or Britain the same day. Film features produced in dozens of countries are also being offered regularly to Canadian viewers.

Radio continues to broadcast daily live reports and complete programs from different parts of the world, either by direct line or recorded transcriptions.

The taste of the "average Canadian" is very hard to assess. Some programs, such as news, sports, national events, drama, variety and popular music, have a very wide audience. Others are designed to interest a more specialized audience or serve a special purpose. These include children's programs, women's interests, farm, fisheries and religious programs, school broadcasts, programs on national and international affairs, on business and economics, labour and politics.

Geared specifically to certain grade levels, school broadcasts and telecasts continue to expand in scope and quality.



Through CBC facilities, schools across Canada are provided with at least 30 minutes daily of broadcast programs specifically planned to meet classroom requirements in each province. In addition to these regional programs, national school broadcasts on both radio and television are carried once a week.

Canada's agricultural population is served by the most complete service of farm broadcasts in the world. Programs of interest to women are scheduled for afternoon listening, there are special children's programs for out of school listening, and time allotted regularly for religious programs. Free time political broadcasts are arranged with the various provincial and federal parties. On radio a special "CBC Wednesday Night" program, and on television the Tuesday "Startime" production, offer full evenings of the finest drama, music, documentary, talks, poetry and recitals.

CBC television programs which might be called "special appeal" programs have been measured as having the following estimated average weekly audiences during the 1958-1959 winter season: Close-Up, 1,270,000 viewers; CBC Folio, 1,290,000; the farm program Country Calendar, 780,000; Press Conference, 750,000; Fighting Words, 395,000; This Week, 315,000; and Explorations, 425,000. These are examples of programs which deliberately do not seek out a mass audience, but which do attract differing groups of a size significant in a two-language nation of 17,000,000. The French network, which serves a potential audience roughly one-third that of the English network, drew these audiences for similar shows: Téléthéâtre, 1,200,000; Travaux et les Jours, 450,000; Point de Mire, 575,000; Les Idées en Marche, 925,000 and Conférence, 50,000.

This mobile television car carries a TV camera and transmitter mounted on aircraft gun turrets, which operate freely over a range of several hundred yards without cables. Pictures are sent by the transmitter sighted at the receiving "dish" (right) of an outside control room.



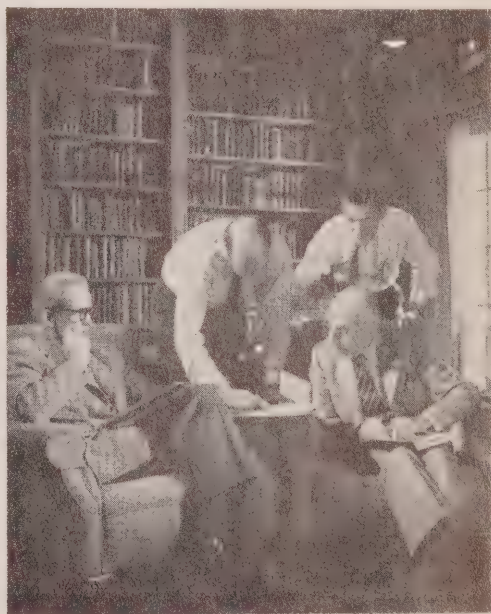
Production shooting of a pilot film for TV based on Stephen Leacock's stories was carried out early in 1960.



While television has completely changed the patterns of listening, radio has maintained a strong position in the Canadian home. Best evidence of this is in the fact that, since 1952, more radio receivers have been purchased than TV receivers. In this period, a total of 4,413,000 radio sets was bought. On both English and French networks, programming has been geared to meet changing tastes: an increased emphasis on daytime programming; a greater use of the medium to meet specialized tastes; and the rebroadcast of some programs to make them more widely available to an audience with different listening habits.

In 1959 radio introduced more live performances of musical programs—the Vancouver Chamber Orchestra, the CBC Symphony, the “Winnipeg Summer Concerts”, Sunday afternoon “Toronto Pops Concerts”, and Tuesday night “Jazz Concerts”. Some programs, such as “The Little Symphonies”, were heard on both French and English networks, as was the Handel-Haydn Festival, a series of seven symphonic and chamber music concerts with the best Canadian musicians. The French network continued to produce Les Concerts Symphoniques de Montréal and “Soirée Littéraire”, a presentation of literature and writers. On radio as on television, the Royal Tour was the highlight of the year. Radio showed its unique qualities of service in carrying broadcasts of events such as the opening of the St. Lawrence Seaway, for although the mid-day ceremony was carried simultaneously on national television, the radio audience was estimated at 650,000 persons in 350,000 homes.

Television is still new and developments continue to take unexpected



Interviews are the backbone of both radio and TV programs. Here Vincent Massey, for seven years Canada's first Canadian governor general, prepares a discussion of education, culture and politics with Blair Fraser.



Many Canadian films are sponsored by industries. A series of eight instructional films on hockey was commercially sponsored, as was a film shot on the Island of Tumaco in Colombia, South America.



turns. An example of this is the sudden emergence of video-tape as a means of recording and rebroadcasting programs with little or no loss in original quality. Through the use of video-tape equipment in its modern relay centre in Calgary, CBC is able to give Western listeners better service in terms of broadcast times and quality. Progress in this direction is in strong contrast to that of colour TV which has remained "just around the corner" for several years despite strong promise. On the other hand it is possible that Canadian broadcasters could be faced with a strong public demand for colour at any time. With this in mind CBC's newest studios are designed to add colour facilities with a minimum of alteration and the communications companies have built the country-wide microwave network to be adaptable to colour transmission.

CBC International Service. The International Service of the Canadian Broadcasting Corporation broadcasts news, news reports, commentaries, talks and other programs which tell listeners in other lands about life in Canada. The headquarters and studios are in the Radio-Canada Building in Montreal and the transmitters and antenna arrays are in Sackville, New Brunswick. Programs are transmitted to listeners directly by shortwave in 16 languages—English, French, German, Spanish, Portuguese, Dutch, Italian, Danish, Norwegian, Swedish, Czech, Slovak, Russian, Ukrainian, Polish and Hungarian. The broadcasts are heard mainly in Eastern and Western Europe, North Africa, the Americas, Australia and New Zealand but the signals reach other areas of the world as well. Some radio organizations in other countries rebroadcast programs over their own domestic facilities. Regularly-recorded programs are provided to radio organizations in Austria, Finland and Greece. The International Service also makes available spoken-word transcriptions in English, French and Spanish; and it provides music transcriptions and a variety of other types of recorded

programs to radio organizations outside Canada. A printed and illustrated program schedule is distributed periodically free of charge to listeners, and correspondence is invited. More than 400,000 letters, cards and listeners' reports have been received since the official inauguration of the service in 1945. Replies are sent in the language of the listener and are supplemented with printed information. The CBC International Service is wholly financed through grants by Parliament.

Films

Film production in Canada has been growing steadily to help supply the increasing number of television stations across the country, in addition to providing hundreds of informational films for industry, government and education.

There are 54 film-making firms, plus seven government agencies. During 1959, they produced 34 theatrical shorts, 807 motion pictures for TV and non-theatrical purposes, plus a total of 4,507 other film items—TV commercials, trailers, newsreel stories, slidefilms, etc.

Canadian laboratories printed 47,978,205 feet of 16mm and more than 21,200,275 feet of 35mm motion picture film—enough to stretch from Halifax to Vancouver six times.

A general view of the shooting stage at the National Film Board Building in Montreal.





One of the latest Norman McLaren animated films—*Le Merle*—tells the story of an old French Canadian nonsense song. White cut-outs on pastel backgrounds provide lively illustrations as the song relates how a blackbird loses parts of his body one by one and then regains them three-fold.

Last year the first major all-Canadian filmed television series made its debut—"RCMP", produced by Crawley Films. This could be the forerunner of a significant new phase in Canadian film productions.

The National Film Board. The National Film Board was established by the Federal Government in 1939 in recognition of the growing importance of films and other audio visual material as an effective medium of information. Since that time the Board has become well known in Canada and abroad as a national documentary film producing and distributing organization whose function is to interpret Canada to Canadians and to the people of other nations in an interesting and factual manner. That it has done so with distinction is evidenced by the fact that several hundred awards of Canadian and international significance have been made to NFB productions.

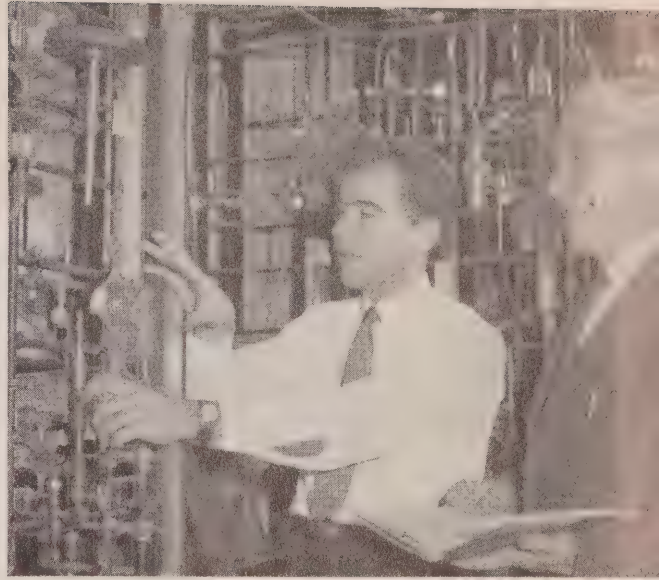
During the year ending March 31, 1959, the Board completed 368 motion pictures, including 105 originals, 113 revisions and adaptations, 65 foreign language versions, 52 newsreel stories and 33 other items.

NFB productions are shown throughout the world in commercial theatres, on television wherever it is in operation and to community audiences at home and abroad. Community showings in Canada reached an audience of 15,000,000 in 1958-59 and, in addition, an undetermined number of people saw NFB films purchased by film libraries, schools, industries and other organizations. During the year 16mm print sales totalled 3,309 in Canada and 3,824 abroad; 21,389 filmstrips were sold, 18,272 in Canada and 3,117 in other countries.

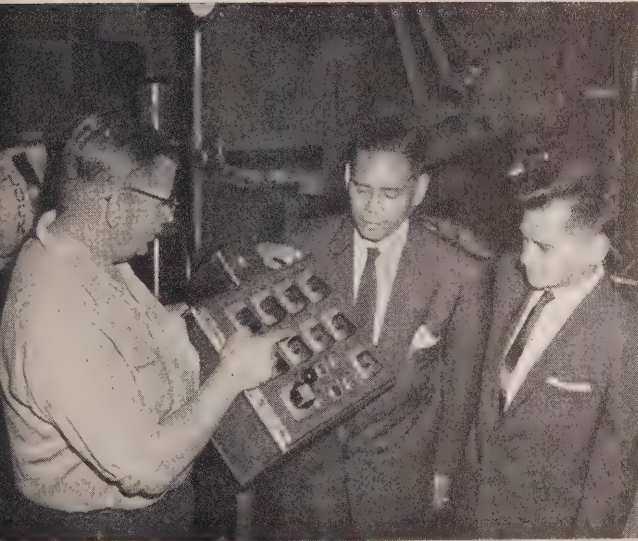
Abroad, Canadian films are distributed through many channels—through posts of the Departments of External Affairs and of Trade and Commerce, through deposits with state and local film distribution agencies, and through exchange agreements with various foreign governments. The reported total of the non-theatrical audience of Canadian films abroad in 1958-59 numbered 24,400,000.

There were 6,502 bookings of NFB films by theatres in Canada and 24,951 abroad. During the year NFB films were televised 5,457 times in Canada and 2,718 times abroad.

Canada contributes funds and technological skills through the Colombo Plan for Co-operative Economic Development in South and Southeast Asia (\$50,000,000 a year); the Commonwealth Technical Assistance Program (\$535,000 since 1958); the United Nations and its agencies (training programs in Canada, technical assistance outside Canada and gifts such as wheat, flour and milk powder); and to the Federation of the West Indies (\$10,000,000 over a five-year period).



A 27-year-old chemist was the first Russian scientist to arrive at the National Research Council laboratories under an agreement for an exchange of Canadian and Soviet scientists.



A machinist explains operations in a diesel engine maintenance plant to Colombo Plan trainees from the Philippines. By September, 1959, a total of 1,270 Asians, 25 West Indians, 17 from other Commonwealth countries and 937 others sent by the UN and its agencies, had come to Canada for specialized training.



Canadian engineers supervising the installation of compressors at the Canada-India Atomic Reactor at Bombay, to which Canada contributed \$8,000,000. Under the Colombo Plan, 161 Canadians had been sent to under-developed countries up to November, 1959.



Quantities and Values of Minerals Produced, 1958 and 1959

Mineral	1958		1959 (prelim.)	
	Quantity	Value	Quantity	Value
		\$		\$
Antimony..... lb.	858,633	284,208	1,614,000	516,126
Bismuth..... "	412,792	771,267	415,909	883,296
Cadmium..... "	1,756,050	2,669,195	2,059,731	2,636,456
Calcium..... "	25,227	31,256	71,610	82,197
Cobalt..... "	2,710,429	5,308,298	3,298,328	5,927,003
Copper..... "	690,227,408	174,430,930	789,785,183	233,296,375
Gold..... oz. t.	4,571,347	155,334,370	4,444,845	149,213,447
Iron ore..... ton	15,726,323	126,131,181	24,477,004	186,206,552
Iron, remelt..... "	—	5,120,620	—	7,587,000
Lead..... lb.	373,360,966	42,413,805	372,989,560	39,574,191
Magnesium..... "	13,591,705	4,064,825	11,633,213	3,489,964
Molybdenum..... "	888,264	1,152,838	850,000	1,105,000
Nickel..... "	279,117,422	194,142,019	370,246,434	257,173,340
Palladium, iridium, etc. oz. t.	154,366	4,840,072	170,160	5,662,499
Platinum..... "	146,092	9,481,371	149,510	10,951,608
Selenium..... lb.	306,990	2,302,426	564,415	3,849,905
Silver..... oz. t.	31,163,470	27,053,007	32,329,137	28,381,750
Tellurium..... lb.	38,250	65,025	96,954	208,401
Thorium..... "	—	—	54,037	116,141
Tin..... "	795,496	625,260	896,000	931,840
Titanium ore..... ton	—	—	24,000	126,000
Tungsten (WO ₃)..... lb.	690,976	1,898,455	—	—
Uranium (U ₃ O ₈)..... "	26,805,232	279,538,471	30,993,754	324,549,609
Zinc..... "	850,197,572	92,501,496	788,916,041	96,563,324
TOTALS, METALLICS....	—	1,130,160,395	—	1,359,032,024
Arsenious oxide..... lb.	2,323,320	94,542	1,887,886	90,783
Asbestos..... ton	925,331	92,276,748	1,042,253	106,591,686
Barite..... "	195,710	2,196,384	255,023	2,514,338
Diatomite..... "	27	540	—	—
Feldspar..... "	20,387	359,966	17,762	286,362
Fluorspar..... "	—	1,542,589	—	2,084,387
Gypsum..... "	3,964,129	5,189,159	5,941,323	8,889,748
Iron oxides..... "	1,632	113,390	1,220	108,765
Lithia..... lb.	3,853,322	2,047,880	2,497,613	1,537,000
Magnesitic-dolomite and brucite..... ton	—	2,529,161	—	2,994,331
Mica..... lb.	1,504,933	89,651	738,271	52,778
Mineral waters..... gal.	316,727	172,568	317,400	172,000
Nepheline syenite..... ton	201,306	2,613,446	230,712	2,908,593
Peat moss..... "	149,013	4,778,860	181,120	6,128,254
Potash K ₂ O..... "	—	—	—	840,000
Pyrite, pyrrhotite....	1,191,731	4,248,668	1,051,873	3,213,814
Quartz..... "	1,453,656	2,538,150	1,934,513	2,994,867
Salt..... "	2,375,192	14,989,542	3,233,512	17,462,050
Silica brick..... M	2,815	472,346	1,904	345,871
Soapstone and talc ¹ ... ton	35,405	429,136	38,884	481,286
Sodium sulphate..... "	173,217	2,862,915	171,000	2,775,758
Sulphur in smelter gas	241,055	2,361,252	278,204	2,718,290
Sulphur, elemental....	94,377	1,872,832	142,970	2,675,387
Titanium dioxide, etc. "	—	6,575,077	—	8,363,320
TOTALS, NON-METALLICS	—	150,354,802	—	176,229,668
Coal..... ton	11,687,110	79,963,327	10,597,255	73,056,903
Natural gas..... M cu. ft.	337,803,726	32,057,536	427,804,000	40,098,850
Petroleum, crude.... bbl.	165,496,196	398,747,818	184,593,000	426,950,227
TOTALS, FUELS.....	—	510,768,681	—	540,105,980
Clay products (brick, tile, etc.).....	—	41,709,903	—	45,185,849
Cement..... ton	6,153,421	96,414,142	6,296,010	97,889,446
Lime..... "	1,596,422	19,465,823	1,668,230	19,707,437
Sand and gravel..... "	160,210,945	96,282,363	177,765,382	100,366,015
Stone..... "	38,156,647	55,582,929	37,474,029	51,166,860
TOTALS, STRUCTURAL MATERIALS.....	—	309,455,160	—	314,315,607
Grand Totals.....	—	2,100,739,038	—	2,389,683,279

¹ Includes pyrophyllite.

Acknowledgments

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The work of assembling the illustrations also involves the co-operation of many people. Credit for the colour photographs is due to Abitibi Power and Paper Co., Ltd.; L'Air Liquide; Canadian Government Travel Bureau; Globe Photos Inc., New York; George Hunter, Toronto; Hunting Survey Corporation Ltd., Toronto; B.C. Jennings, Vancouver; Malak, Ottawa; Robert C. Ragsdale, Toronto.

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Abbreviations

bbl.—barrel
 bu.—bushel
 cu. ft.—cubic feet
 cwt.—hundredweight
 ft. b.m.—feet board measure
 gal.—gallon
 hp.—horse-power

kw.—kilowatt
 lb.—pound
 M—thousand
 mm.—millimetre
 oz. t.—ounces troy
 p.c.—per cent
 sq. mi.—square miles





Government
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